GEOLOGICAL SURVEY OF CANADA

A. P. LOW, B.Sc., DIRECTOR

SECTION OF MINES

ANNUAL REPORT ON THE MINERAL INDUSTRIES OF CANADA

FOR

1905

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OTTAWA, January 10, 1907.

To A. P. Low, Esq., B. Sc.,
Director and Deputy Head,
Geological Survey Dept.

SIR,—I beg herewith to hand you the Annual Statistical Report of the Mineral Industries of Canada giving the complete and revised information regarding these industries for the year ending December 31, 1905. This has been preceded by an advance statement of the Mineral Production dated March 2, 1906, which, as usual, was only provisional and subject to alteration. Complete data relating to the mineral industries cannot be obtained until well on in the year following that dealt with so that compilation of the final report can only be commenced late in the succeeding year and its issue is thus delayed.

Besides the preparation of the accompanying report, the staff of the Section has, as usual, been kept busy in many other kindred directions, such as answering numerous inquiries regarding the mineral resources, the mining and metallurgical industries of the country, as well as in collecting, filing and indexing all available information regarding the same. Mining districts have been visited and studied as far as time and means permitted.

Acknowledgment is heartily accorded of the work performed by the staff of the Section in respect of all its functions. Apart from the collection and compilation of the Statistics, which is Mr. McLeish's chief charge, he has taken especial interest in the Structural Materials and has made some preliminary studies in the field in this connexion. For several years now Mr. Denis has been engaged in the field in investigation of the coal, gas and petroleum fields of Canada, and the results of his work will appear shortly in bulletin form. A similar work covering copper in Eastern Canada has been commenced by myself and will appear as a re-issue of the Bulletin on this subject already issued by the Survey.

I am Sir,

Your obedient servant,

ELFRIC DREW INGALL,
Mining Engineer to the Geological Survey.

EXPLANATORY NOTES.

YEAR AND TON USED.

The year referred to throughout this report is the calendar year, except for the figures of imports, which refer to the fiscal year ending June 30. The ton is that of 2,000 pounds, unless otherwise stated.

EXPORTS AND IMPORTS.

The figures given throughout the report referring to exports and imports are compiled from data obtained from the books of the Customs Department, and will occasionally show discrepancies, which, however, there are no means of correcting.

The exports and imports under the headings of each province do not necessarily represent the production and consumption of the province; e.g., material produced in Ontario is often shipped from Montreal and entered there for export, so falling under the heading, Quebec.

NOTE.—N.E.S. = Not elsewhere specified.

VALUES ADOPTED.

The values of the metallic minerals produced, as per returns to this Department, are calculated on the basis of their metallic contents at the average market price of the metal for the current year. Spot values have been adopted for the figures of production of the non-metallic minerals.

GENERAL NOTES.

As in the past, care is taken to avoid interference with private interests in the manner of publishing results, and all returns of production of individual mines are treated as confidential, unless otherwise arranged with those interested. The confidence of the mining community, thus gained, has resulted in an increasingly general response to our circulars, although to complete our data, personal application is still necessary in a small number of instances, and a yet more prompt response on the part of all applied to, will help still further towards an earlier publication of the material.

The figures given throughout the reports are based, as far as possible, upon returns obtained direct from the various operators, or from official data, and the totals are checked by comparison with railway shipments, exports, and all other available sources of information. It can be therefore fairly claimed that they are as accurate as it is possible to make such figures.

After investigation of the subject we have, however, found that in the nature of things, export and railway figures can only be taken as approximately correct in most instances. In the case of the export figures entries are made, as a rule, by those having no technical knowledge of mineral substances, and in the case of the railways but few of the shipments are actually weighed, so that car-load lots, for instance, may differ considerably from the theoretical load of the car.

The lists of operators given throughout the report are not put forward as complete in every case, only those known to be active being included. Producers finding their names omitted are invited to communicate with this office that they may be included in the next issue.

CORRECTIONS—ALTERATIONS.

Corrections and alterations have been made throughout this report wherever they seemed to be called for, according to more complete and reliable data, available since previous issues.

The tabulated statement given in the folded sheet at the beginning of the report represents a compilation of all the similar statements found in previous reports, re-modelled and further revised wherever possible.

INTRODUCTION.

A reference to the accompanying general table shows that the grand total of the mineral production of Canada for 1905 was valued at $69,525,170. For 1904, as compared with 1903, there was, unfortunately, a shrinkage of about 2·7 per cent to record, so that it is gratifying to find that not only was this falling off made up but that the increase over 1904 amounts to $9,451,273, or equivalent to nearly 16 per cent.

The uniform basis of valuation invariably adopted by this Department enables a comparison to be made, and it will be noted the present year's total is just about $40,000,000 greater than that for 1895, or a growth of 200 per cent.

The increases and decreases in the total valuations of the important items in the general table are exhibited in the table following.

INCREASES AND DECREASES IN VALUE.

Products.	Increases.	Decreases.
	Value.	Value.
	$	$
Copper	2,191,025	
Gold		1,852,122
Pig iron (from Canadian ore)	24,252	
Lead	1,059,411	
Nickel	3,331,373	
Cobalt	63,380	
Silver	1,570,580	
Zinc		
Asbestus and asbestic	276,907	
Coal	928,032	
Corundum	39,608	
Gypsum	211,694	
Natural gas	51,185	
Petroleum		79,867
Pyrites		8,547
Salt		920
Cement, natural		39,973
Cement, Portland	625,748	
	10,373,195	1,981,429

It will be noticed that substantial increases are shown by all the leading industries except in the case of gold in which a very considerable falling off has to be recorded. This is altogether due to the continued decrease in the production of the Yukon placers, which has been continuous now for some years. This shrinkage has been offset by increases in all the other gold mining districts of the country, amounting to over $300,000. An interesting feature is the increase in the output of cobalt, which is a new member among the metallics, appearing for the first time only last year. The items in the above table indicate the great prosperity of the mineral industry of Canada, representing as they do nearly 88 per cent of the whole.

PROPORTIONAL INCREASES AND DECREASES OF DIFFERENT MINERAL PRODUCTS.

Products.	Quantity.		Value.	
	Increase.	Decrease.	Increase.	Decrease.
	p.c.	p.c.	p.c.	p.c.
Metallic—				
Copper	16·21	.....	41·28	.....
Gold	.....	11·25	.....	11·25
Pig iron (from Canadian ore only)	.....	·18	2·41	.....
Pig iron (from both home and imported ores)	73·11	.....	75·57	.....
Lead	51·51	.....	65·50	.....
Nickel	78·96	.....	78·96	.....
Silver	67·55	.....	76·72	.....
Cobalt	313·70	.....	173·07	.....
Non-metallic—				
Asbestus and asbestic	40·85	.....	22·57	.....
Coal	5·00	.....	5·59	.....
Corundum	65·55	.....	36·15	.....
Gypsum	27·80	.....	56·53	.....
Mica	.....	.....	10·58	.....
Natural gas	.....	.....	15·58	.....
Petroleum	25·94	.....	.....	8·53
Salt	.....	3·06	.....	·28
Portland cement	47·91	.....	48·58	.....
Granite	.....	.....	50·86	.....

In the above table the proportional increases and decreases in the chief industries are given both for quantity and value. A study of the figures given will show to what extent the increased or decreased values given in the preceding table are due to higher or lower prices obtainable for the various products. It will be noticed that leaving gold out, the prices of copper, lead and silver were much higher than for the previous year, whilst pig iron shows a slight advance and cobalt a very marked decrease in value. The latter feature is due to the depressing effect on the market of the large supply of this metal rendered available as a result of the discoveries at Cobalt, Ontario.

Amongst the non-metallic products the increases and decreases are fairly evenly distributed. In this class the matter is often complicated by the proportions of different grades of products contributing to the total for each industry. Thus a proportional raise in the values does not necessarily mean higher prices throughout, it may indicate a relatively larger output of the higher priced products of any given industry.

PROPORTIONATE VALUE OF DIFFERENT MINERAL PRODUCTS, 1905.

Products.	Contributing over 10 p.c.	Contributing between 10 and 1 p.c.	Contributing under 1 p.c.	Total.
1 Coal	25·20			
2 Gold	21·01			
3 Nickel	10·86			
4 Copper	10·78			
5 Bricks	.....	5·66		
6 Silver	.....	5·20		
7 Lead	.....	3·85		
8 Cement	.....	2·75		
9 Building stone	.....	2·63		
10 Asbestus and Asbestic	.....	2·16		
11 Iron and iron ore (Canadian)	.....	1·74		
12 Petroleum	.....	1·23		
13 Clay products (pottery, tiles, &c., except bricks)	.....	1·08		
14 Lime	.....	1·08		
15 Gypsum	.....	.....	0·84	
16 Natural gas	.....	.....	0·55	
17 Salt	.....	.....	0·46	
18 Granite	.....	.....	0·33	
19 Mica	.....	.....	0·26	
20 Corundum	.....	.....	0·22	
21 Sundry under 1 per cent	.....	.....	1·85	
Total	.....	.....	.....	100·00

In studying the mineral industry of the country as a whole it becomes interesting to realize to what extent the different branches are to be credited as contributors to the grand total. This view of the matter is set forth in the foregoing table.

It will be noticed that the most valuable of the mineral assets of the country is coal, which stands pre-eminent, and if to this be added the other fuel items, viz.: petroleum and natural gas, 27 per cent of the whole is accounted for. The rest of the non-metallic class, other than structural materials, are to be credited only with some 5 per cent. The aggregate contribution of the structural material class is nearly 14 per cent, the balance of nearly 54 per cent being contributed by the metallic class.

Thus nearly 81 per cent of the whole value of the mineral output of Canada for 1905 is due to the activities in those industries exploiting our fuels and metallic mineral deposits.

The figures given in the table illustrate the relative importance of the individual industries without further comment. It may be pointed out, however, in regard to bricks, building stone, clay products and lime that, as explained elsewhere in the report, the available figures are probably incomplete and were it possible to get fuller data these items would take a much higher proportional rank.

With regard to the iron and iron ores item it should be remarked that the figures deal only with the results of treating Canadian ore and therefore are not to be taken as illustrative of the proportional importance of the iron smelting industries of the country, The smelting industries, as distinct from mining proper, are dealt with fully in the body of the report.

PRODUCTION BY PROVINCES, 1904 AND 1905.

Province.	1904.		1905.	
	Value of Production.	Per cent.	Value of Production.	Per cent.
	$		$	
Nova Scotia	11,212,746	18·7	11,507,047	16·55
New Brunswick	559,913	0·9	559,035	0·80
Quebec	3,688,482	6·1	4,405,975	6·33
Ontario	12,582,843	20·9	18,833,292	27·09
Manitoba, Alberta, Saskatchewan and Yukon	12,713,613	21·2	11,841,634	17·04
British Columbia	19,316,300	32·2	22,378,187	32·19
Total	60,073,897	100·00	69,525,170	100·00

In the above table are compared the proportional contributions for 1904 and 1905 of the several provinces of the Dominion. As the figures given are reduced to a uniform basis of valuation a comparison is rendered possible.

It will be observed that whilst the mineral industry of the eastern provinces show a steady growth the figures for Ontario and British Columbia are considerably augmented. In the former case this results partly from the working of the rich veins of the Cobalt district, although the higher prices ruling for metals have been an important factor in both cases.

In the prairie provinces and Yukon the falling off is of course due to the shrinkage in the gold output of the Yukon placers.

EXPORTS

MINERALS AND MINERAL PRODUCTS OF CANADA DURING CALENDER YEAR 1905.

Products.	Value.	Products.	Value.
Aluminum	$ 509,777	Manufactures of metals, other than iron or steel	$ 81,945
Antimony ore	27,118	Mica	179,049
Arsenic	5,400	Mineral pigments	7,704
Asbestus	1,386,115	" water	2,137
Barytes	14,343	Nickel	1,569,693
Bricks	5,888	Oil, crude	2
Cement	3,143	" refined	2,078
Clay, manufactures of	35	Ores unspecified	687,565
Chromite	45,072	Platinum	283
Coal	4,029,457	Phosphate	1,253
Coke	509,908	Plumbago, crude	7,596
Copper	5,443,873	" mfrs. of	518
Feldspar	27,660	Pyrites	55,767
Gold	13,706,969	Salt	6,112
Grindstones	17,461	Sand and gravel	152,805
" rough	7,497	Silver	2,777,218
Gypsum, crude	388,474	Stone unwrought	13,089
" ground	2,673	" wrought	3,545
Iron and steel	1,287,558	Other articles	71,331
Iron ore	407,881		
Lead	1,046,541	Total	34,579,886
Lime	85,723		
Manganese ore	1,720		

EXPORTS.

DESTINATION OF PRODUCTS OF THE MINE, DURING THE FISCAL YEAR, 1904-1905.

Destination.	Value.	Destination.	Value.
United States	$28,764,461	St. Pierre	$26,765
Great Britain	991,874	Mexico	18,131
Belgium	841,121	Denmark	16,017
Newfoundland	370,968	British West Indies	9,895
China	289,540	Holland	7,236
Germany	251,155	Cuba	775
Bermuda	72,379	Australia	695
Hong Kong	66,693	New Zealand	559
France	54,853	Spain	347
Japan	40,789	Argentine	208
Italy	39,077		
Norway and Swedea	36,764		$31,932,329
British Africa	32,027		

The foregoing two tables are compiled from figures to be found in the reports of the Department of Trade and Commerce illustrative of the exports of mineral substances from the country.

As might be expected the metallic ores and products form the greater bulk of the sales to other countries. Under the headings Gold, Silver, Copper, Nickel, Lead, Iron and Steel comes nearly 75 per cent of the values of all the exports and if to these be added Coal and Coke, only about 14 per cent is left for the balance of the mineral substances exported. In the order of their importance the chief items are as follows :—Gold, 39·8 per cent ; Copper, 15·72 per cent ; Coal and Coke, 11·65 ; Silver, 8·30 ; Nickel, 4·54 per cent ; Asbestus, 4·20 per cent; Iron and Steel, 3·72 per cent and Lead, 3·03 per cent.

As might be expected when the amount of United States capital invested in mining in Canada is considered, most of Canada's mineral which is exported finds its way into the United States. The figures in the table of destinations show that over 90 per cent is there marketed. Other American countries take about 0·15 ; Asia, 1.06 and Europe 3·84 per cent. To various points in the British Empire the exports of mineral and metallic substances amount to 4·95 per cent. of the whole.

The foregoing tables are all made to cover the calendar year for comparison with the data so presented throughout the body of the report. The subjoined statement of imports is made to cover the fiscal year ending June 30, 1904. The items therein contained have been selected from the reports of the Trade and Commerce Department.

Although the selection is necessarily made in a more or less arbitrary manner many interesting points come to light. In the items running over one million it will be noted that very much the largest number, representing over 44·7 per cent of the grand total, are those including machinery, hardware and highly manufactured articles, &c., and which would come in competition with the manufacturer rather than with the miner or smelter. Semi-finished products of iron such as pig, blooms, plates, etc., together with various iron alloys used as raw material by manufacturers of more finished products amounts to nearly eleven and a half million dollars or about 13·7 per cent. The country imports nearly twenty and a-half million dollars worth of coal, of which about half is anthracite and half bituminous. The items before mentioned, although comprising but 13 entries out of the seventy-seven in the table, cover 83 per cent of the whole. The remaining sixty-four items cover a great variety of substances, many of which will doubtless be eventually replaced by home products, whilst others will continue to come in owing to the greater proximity of the foreign source of production and for other similar causes.

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IMPORTS.

MINERAL AND MINERAL PRODUCTS FOR FISCAL YEAR 1904-1905.

Products.	Value.	Products.	Value.
Alumina	$ 129,822	Litharge	$ 57,736
Alum and aluminous cake	58,385	Lithographic stone	13,683
Aluminium	182,970	Manganese, oxide of	6,892
Antimony	6,664	Magnesia	3,747
" salts	6,164	Marble and mfrs. of	145,466
Arsenic	7,661	Mercury	48,412
Asbestus and mfrs. of	116,836	Metallic alloys—	
Asphaltum	133,615	Babbitt metal	33,961
Bells and gongs	80,251	Brass and mfrs. of	1,340,349
Bismuth	1,410	Britannia metal	32,979
Blast furnace slags	7,017	German silver	76,874
Borax	88,923	Type metal	6,156
Bricks and tiles	369,561	Mineral and bituminous substances, N.E.S	58,569
" fire	392,195	Mineralogical specimens	2,997
Buhrstones	2,607	Mineral and metallic pigments, paints and colours	1,337,159
Cement	1,263,828	Mineral waters	161,790
Chalk	26,172	Nickel	19,076
Clays	176,805	Ores of metals, N.E.S	1,775,158
Coal	20,439,723	Paraffine wax	7,795
" tar and pitch	150,141	" candles	15,293
Coke	807,842	Petroleum and products of	2,151,514
Copper and mfrs. of	2,042,429	Phosphate (fertilizer)	15,377
Cryolite	11,966	Phosphorus	1,415
Crucibles, clay or plumbago	31,353	Platinum, mfrs. of	61,719
Chloride of lime	54,889	Precious stones	1,489,076
Earthenware	1,636,214	Pumice	8,447
Electric carbons	31,622	Salt	399,010
Emery	55,230	Saltpetre	96,304
Feldspar, quartz, flint, &c	18,770	Sand and gravel	92,722
Fullers' earth	4,967	Slate and mfrs. of	93,228
Gold and silver and mfrs. of	502,357	Stone and mfrs. of	302,724
Graphite and mfrs. of	46,434	Sulphate of copper	94,182
Gypsum, plaster of Paris, &c	47,710	" iron	3,164
Iron and steel—		Sulphur	242,251
Pigs, scraps, blooms, &c.	1,463,983	Sulphuric acid	8,227
Rolled, bars, plates, &c., including chrome steel	9,711,620	Tin and manufactures of	2,791,757
Ferro-silicon, ferro-manganese, &c	246,815	Whiting	51,215
Manufactures of, machinery, hardware, &c	29,357,106	Zinc and mfrs. of	363,404
Kainite	6,427		
Lead and mfrs. of	261,555	Total	$3,521,375
Lime	71,588		

PRECIOUS METALS.

Under this heading, the metals gold and silver, are considered together. The rarer metals of the platinum group are considered under their respective names as platinum and palladium in miscellaneous metals.

Gold.

The Geological Survey Department is indebted to the various Provincial Mining Bureaus for much of the statistical information given in the following tables.

The gold output of Canada in 1905 was $14,610,395 as compared with an output of $16,462,517 in 1904, a total decrease of $1,852,122 or 11·25 per cent. The gold production has steadily decreased since 1900, when a maximum output of $27,908,153 was reached, the falling off being due in the main to the gradual lessening of the output of the Yukon placer deposits which reached their highest production in the year mentioned. The other gold producing districts of Canada all show increases in 1905.

Of the total cutput, 57 per cent was derived from the Yukon district, and 96 per cent from the Yukon and British Columbia combined. Nearly 64 per cent of the whole was obtained from placer and hydraulic workings, &c., and 36 per cent from lode mining.

Table 1.

Precious Metals.

Gold.—Annual Production in Canada.

Calendar Year.	*Ounces. Fine.	Value.	Calendar Year.	*Ounces. Fine.	Value.
1887	57,465	$ 1,187,804	1897	291,582	$ 6,027,016
1888	53,150	1,098,610	1898	666,445	13,775,420
1889	62,658	1,295,159	1899	1,028,620	21,261,584
1890	55,625	1,149,776	1900	1,350,176	27,908,153
1891	45,022	930,614	1901	1,167,320	24,128,503
1892	43,909	907,601	1902	1,032,253	21,336,667
1893	47,247	976,603	1903	911,639	18,843,590
1894	54,605	1,128,688	1904	796,445	16,462,517
1895	100,806	2,083,674	1905	706,341	14,610,395
1896	133,274	2,754,774			

*Calculated from the value at the rate of $20.67 per ounce.

TABLE 2.

PRECIOUS METALS.

GOLD—PRODUCTION BY PROVINCES AND DISTRICTS, CALENDAR YEAR 1905.

Provinces.	*Ounces. Fine.	Value.
Nova Scotia	(b) 13,708	$ 283,353
Quebec	191	3,940
Ontario	(b) 4,403	91,000
North-west Territories—		
Yukon District	(a) 402,864	8,327,200
Saskatchewan River	(a) 121	2,500
British Columbia	(c) 285,554	5,902,402
Total	706,841	14,610,395

* Calculated from the value at the rate of $20.67 per ounce.

(a) Placer gold.
(b) Gold from vein mining.
(c) As follows: Gold from placer mining ..... $ 969,300
vein " 4,933,102
$5,902,402

Nova Scotia.—Although the gold output of Nova Scotia shows an increase of nearly a third more than in 1904, the output for 1905 is still but little more than half the production of 1903, and with the exception of the previous year, is the smallest output recorded since 1883, a period of 26 years. In 1905, there were mined and crushed about 57,774 tons of ore yielding 14,913 oz. 6 dwt. 9 grs. of gold valued at $283,353, an average of 5 dwt. 4 grs. or $4.99 per ton.

An interesting feature in connexion with the production of gold during the year, has been the mining and shipping of auriferous stibnite ore by the Dominion Antimony Company, from the mine at West Gore, Hants county, concerning which the following notes have been gleaned from the Nova Scotia Mines Report.

The amount of ore produced from the mine during the year was about 4,000 tons divided into two classes as follows:—

No. 1 ore—429 tons said to contain 46 per cent antimony and 2·56 ounces of gold per ton.

No. 2 ore—3,570 tons said to contain 8 per cent antimony, and $10 in gold per ton.

Five hundred and twenty-seven tons of mixed ore were shipped to English smelting companies and contained in gold 1,232 oz. 16 dwt. 23 grs. valued at $24,657. Only half of this amount, however, is received at present by the operators.

The smelter gives only a certain percentage of the gold values, and to recover these and save the heavy freight rates now paid, have been the objects of extensive experimenting. (See further under Antimony).

Mr. Weatherbe, deputy inspector, reports in the Nova Scotia Mines Report that 'the industry generally, has fallen off to a very marked degree, and with the closing of Dolliver Mountain, Brookfield (one of the most regular and largest producers for the past twelve years) the Bluenose, Nova Scotia and Mexican, Ecum Secum, Wine Harbour, &c., and the serious falling off in the returns from Caribou, Nova Scotia gold mining operations present a gloomy aspect.'

At the instance of the Nova Scotia Mining Society the Provincial Government employed an eminent mining engineer, Mr. T. A. Rickard, of New York, to report on the gold fields. Mr. Rickard spent from August 16th to Sept. 13th, 1905, in the province and visited the following districts: "Montague, Waverly, Renfrew, Oldham, Mount Uniacke, Caribou, Salmon River, Harrigan Cove, Goldenville, Cochran Hill, Forest Hill, Middle Country Harbour, Isaac Harbour, Goldboro, Lower Seal Harbour, West Gore, Leipsigate and Brookfield." His report has not yet been published.

Statistics of production in Nova Scotia are given in tables 3, 4, 5 and 6 following: Table 3 shows the annual gold output. Table 4 the tons of quartz crushed and the average yield per ton. Table 5 shows the total production of each district from 1862 to the end of 1895 as well as the average yield per ton, and table 6 shows the amount of ore crushed and its yield per district for 1905.

TABLE 3.

PRECIOUS METALS.

GOLD. NOVA SCOTIA:—ANNUAL PRODUCTION.

Calendar Year.	Value.	Calendar Year	Value.
1862	$141,871	1884	$313,554
1863	272,448	1885	432,971
1864	390,349	1886	455,564
1865	496,357	1887	413,631
1866	491,491	1888	436,939
1867	532,563	1889	510,029
1868	400,555	1890	474,990
1869	348,427	1891	451,503
1870	387,392	1892	389,965
1871	374,972	1893	381,095
1872	255,349	1894	389,338
1873	231,122	1895	453,119
1874	178,244	1896	493,568
1875	218,629	1897	562.165
1876	233,585	1898	538,590
1877	329,205	1899	617,604
1878	245,253	1900	598,553
1879	268,328	1901	546.963
1880	257,823	1902	627,357
1881	209,755	1903	527,806
1882	275,090	1904	214,209
1883	301,207	1905	283,353

Table A.

GOLD

PRODUCTION

A.	*Canada*	*Value*
B.	*Nova Scotia*	*do*
D.	*Ontario*	*do*
E.	*Northwest Territories (chiefly Yukon)*	*do*
F.	*British Columbia*	*do*

NOTE. In Quebec for many years small quantities of gold have been produced, which however cannot be shown on a diagram of this scale.

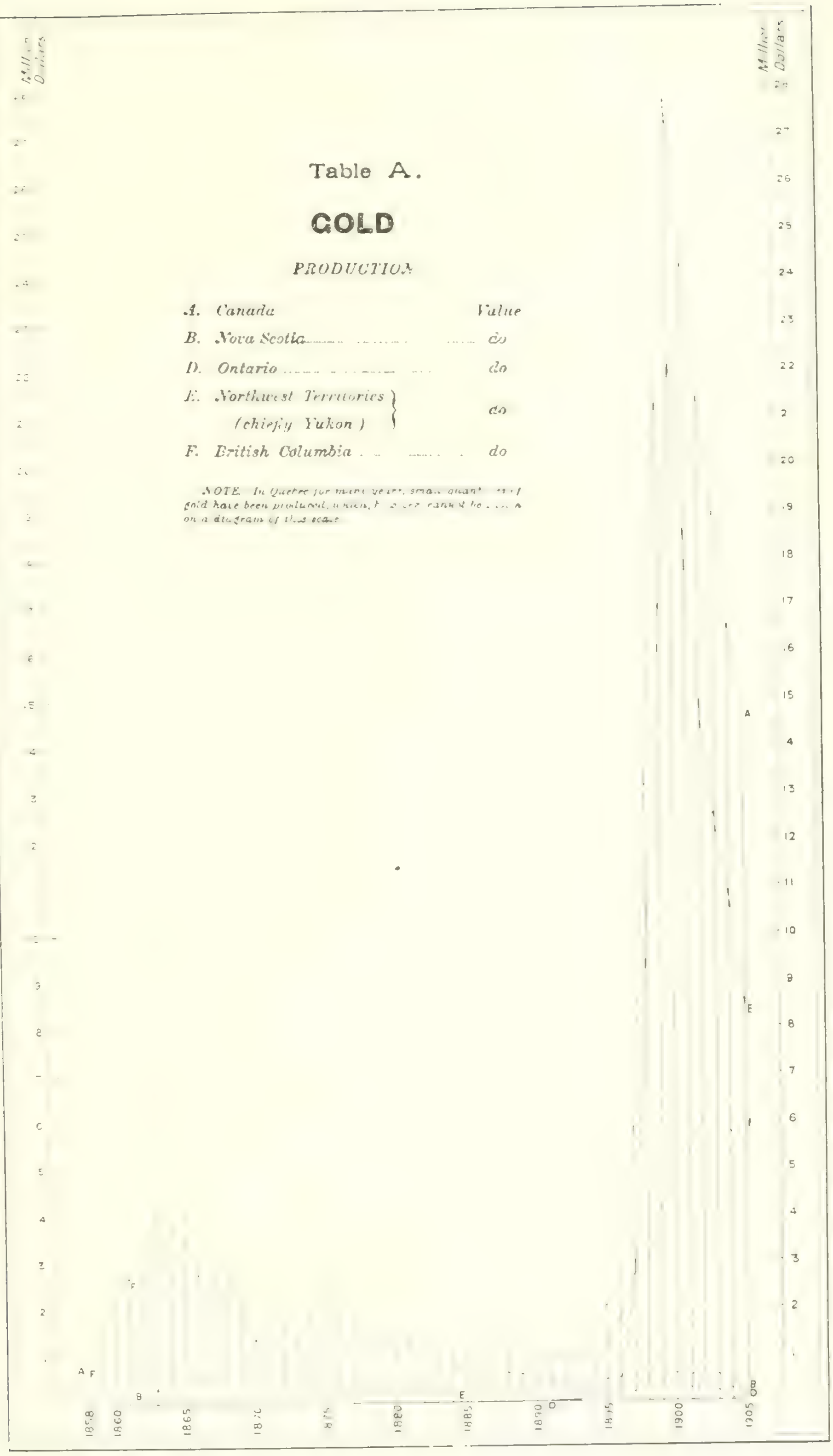

Table B.

SILVER

PRODUCTION

A.	*Canada*	*Value*
B.	*Quebec*	*do*
C.	*Ontario*	*do*
D.	*British Columbia*	*do*
E.	*N.W. Territories (Yukon)*	*do*

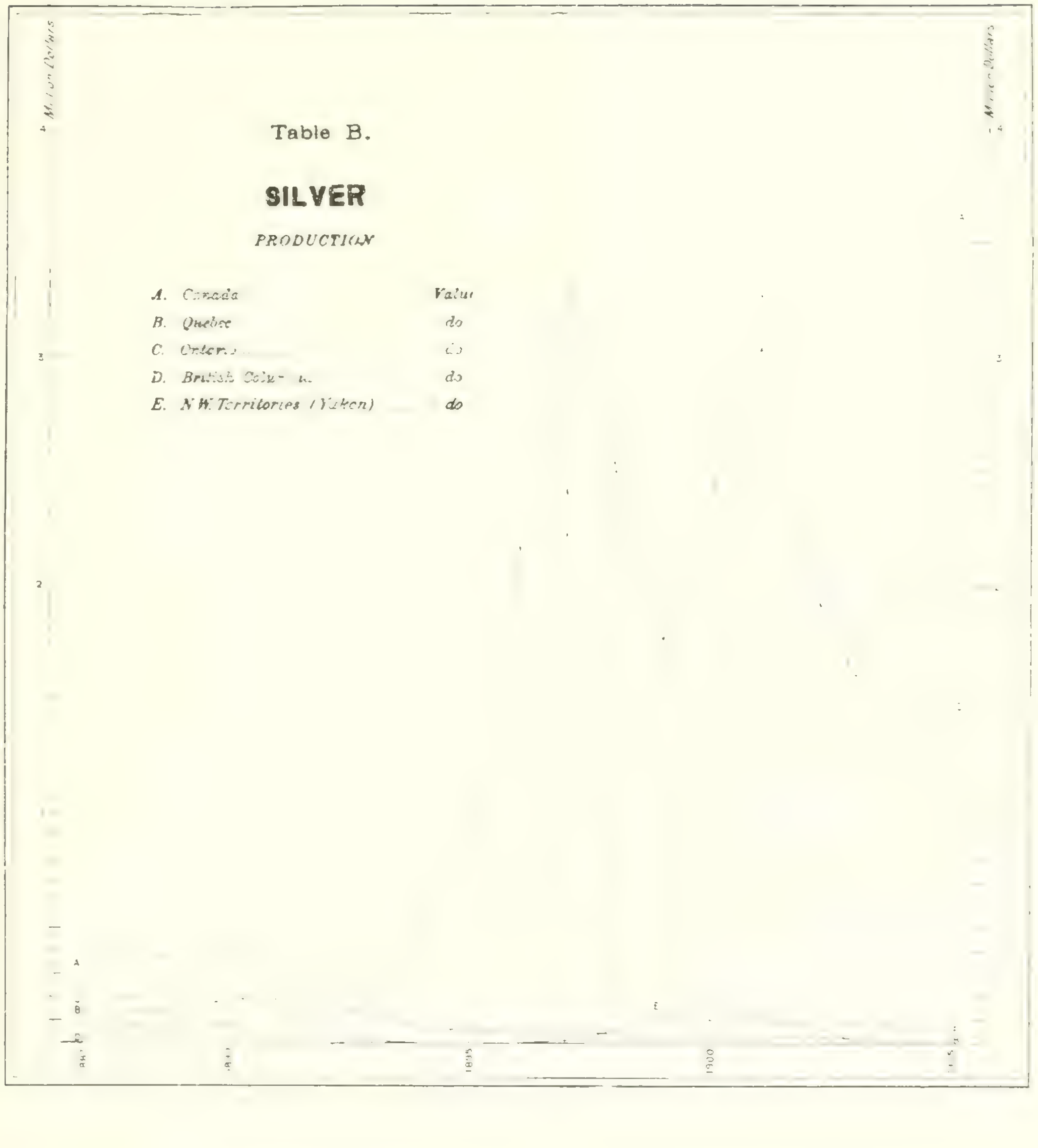

TABLE 4.

PRECIOUS METALS.

GOLD.—NOVA SCOTIA: ORE TREATED AND YIELD OF GOLD PER TON.

Calendar Year.	Tons Treated.	Yield of Gold per Ton.	Calendar Year.	Tons Treated.	Yield of Gold per Ton.
1862	6,473	$21·91	1884	25,186	12 44
1863	17,000	16·02	1885	28,890	14·98
1864	21,431	18·21	1886	29,010	15·70
1865	24,421	20·32	1887	32,280	12 81
1866	32,157	15·28	1888	36,178	12·08
1867	31,384	16·96	1889	39,160	13 02
1868	32,259	12·41	1890	42,749	11·11
1869	35,144	19·91	1891	36,351	12 42
1870	30,824	12·56	1892	32,552	11 98
1871	30,787	12·17	1893	42,354	8 99
1872	17,089	14·94	1894	55,357	7·04
1873	17,708	13·05	1895	60,600	7 47
1874	13,844	12·87	1896	69,169	7·13
1875	14,810	14·76	1897	73,192	7·68
1876	15,490	15·08	1898	82,774	6 50
1877	17,369	18·95	1899	12,226	5 50
1878	17,989	13·63	1900	87,390	6 85
1879	15,936	16·83	1901	91,948	5 32
1880	13,997	18·42	1902	93,842	6 68
1881	16,556	12·66	1903	103,856	5 08
1882	21,081	13·04	1904	45,436	4·71
1883	25,954	$11·60	1905	57,774	4·90

TABLE 5.

PRECIOUS METALS.

GOLD—NOVA SCOTIA:—PRODUCTION OF THE DIFFERENT DISTRICTS FROM 1862 TO 1905, INCLUSIVE.

Districts.	Tons of Ore crushed.	Total Yield.				Average Yield per ton of 2000 lbs.
		Oz.	Dwt.	Grs.	Value at $19.00 per oz.	
					$	
Brookfield	98,092	43,214	2	8	821,068	8 37
Caribou	176,370	54,786	5	7	1,040,939	5 90
Central Rawdon	13,340	10,121	11	21	192,310	14·42
Fifteen Mile Stream	42,483	18,800	0	5	357,200	8 41
Lake Catcha	18,613	15,075	11	18	286,436	15 39
Malaga	24,787	17,486	12	4	332,246	13 40
Montague	27,529	40,483	11	4	769,188	27 94
Oldham	52,997	56,739	8	21	1,078,050	20 34
Renfrew	52,452	45,439	19	13	863,369	16 46
Salmon River	104,136	34,100	11	21	647,911	6 32
Sherbrooke	318,157	159,841	6	13	3,036,985	9·55
Stormont	327,274	91,557	16	0	1,739,598	5 32
Tangier	40,677	23,124	17	6	439,373	10·80
Uniacke	64,495	43,765	18	3	831,552	12·89
Waverly	155,908	70,833	12	23	1,345,839	8·63
Wine Harbour	69,856	39,798	7	3	756,169	10 82
Other districts	135,705	84,103	4	13	1,597,961	11 78
Total	1,722,871	849,272	17	15	16,136,185	9 37

TABLE 6.

PRECIOUS METALS.

GOLD.—NOVA SCOTIA:—DISTRICT DETAILS, CALENDAR YEAR, 1905.

Districts.	Mines	Mills.	Tons Crushed.	Total Yield of Gold.			Average Yield of Gold per Ton.		
				Oz.	Dwt	Grs.	Oz.	Dwt.	Grs.
Brookfield	2	2	10,315	3,993	6	14	..	7	18
Caribou	5	4	8,336	861	10	0	..	1	23
Cow Bay	1	1	112	127	11	11	1	2	19
Harrigan Cove	1	1	65	15	0	0	..	4	15
Kemptville	1	1	20	7	9	0	..	7	11
Killag	1	1	215	35	6	0	..	3	7
Lawrencetown	1	1	199	26	1	0	..	2	15
Leipsigate	1	1	6,235	2,210	11	0	..	7	2
Lake Catcha	1	1	48	35	1	0	..	14	14
Miller's Lake	1	1	50	59	0	0	1	3	14
Montague	1	1	523	124	8	8	..	4	18
Oldham	3	1	1,342	1,565	1	0	1	3	8
Renfrew	2	1	241	30	5	0	..	2	12
Sherbrooke	3	3	5,381	984	10	0	..	3	16
Stormont	6	6	21,970	3,042	7	5	..	2	18
Tangier	1	1	220	26	12	4	..	2	10
Uniacke	3	2	80	133	9	6	1	13	8
Vogler's Cove	1	1	200	43	7	19	.	4	8
Whiteburn	1	1	4	4	3	0	1	0	18
Wine Harbour	1	1	1,691	332	10	0	.	3	22
Mortared			.....	22	19	15		..	..
Stibnite ore			527	1,232	16	23	2	6	19
Total	37	32	57,774	14,913	6	9	..	5	4

Quebec.—There was practically no gold derived from alluvial workings in the province of Quebec during 1905, although some prospecting work was being done in Dudswell district. The figures of production for 1905, given in table 7, represent the small quantity of gold saved from the pyritous ores mined near Sherbrooke, in the Eastern Townships.

TABLE 7.

PRECIOUS METALS.

GOLD.—QUEBEC:—ANNUAL PRODUCTION.

Calendar Year.	Value.	Calendar Year.	Value.
1877	$12,057	1892	$12,987
1878	17,937	1893	15,696
1879	23,972	1894	29,196
1880	33,174	1895	1,281
1881	56,661	1896	3,000
1882	17,093	1897	900
1883	17,787	1898	6,089
1884	8,720	1899	4,916
1885	2,120	1900	Nil.
1886	3,981	1901	3,000
1887	1,604	1902	8,073
1888	3,740	1903	3,712
1889	1,207	1904	2,900
1890	1,350	1905	3,940
1891	1,800		

Ontario—About $91,000 worth of gold was mined in Ontario during 1905.

Statistics of production in previous years are given in Table 8.

TABLE 8.

PRECIOUS METALS.

GOLD.—ONTARIO:—ANNUAL PRODUCTION.

Calendar Year.	*Ounces. Fine.	Value.
1887	327	$ 6,760
1888		
1889		
1890		
1891	97	2,000
1892	344	7,118
1893	708	14,637
1894	1,917	39,624
1895	3,015	62,320
1896	5,563	115,000
1897	9,158	189,294
1898	12,864	265,889
1899	20,395	421,591
1900	14,392	297,495
1901	11,845	244,837
1902	11,119	229,828
1903	9,097	188,036
1904	1,935	40,000
1905	4,403	91,000

*Calculated from the value at the rate of $20.67 per ounce.

Alberta and Yukon District.—The placer deposits of the Saskatchewan river in the vicinity of Edmonton, produced about $2,500 in gold during 1905.

The production of gold in the Yukon, based on sales made to the various receiving offices of the United States Mint was in 1905 $8,327,200. This is a decrease of $2,172,800 as compared with the production in 1904.

TABLE 9.

PRECIOUS METALS.

GOLD.—NORTH-WEST TERRITORIES :—PRODUCTION.

Calendar Year.	Yukon District.		Saskatchewan River.	
	*Ounces. Fine.	Value.	*Ounces Fine.	Value.
		$		$
1885 } 1886 }	4,838	100,000		
1887	3,387	70,000	102	2,100
1888	1,935	40,000	58	1,200
1889	8,466	175,000	968	20,000
1890	8,466	175,000	194	4,000
1891	1,935	40,000	266	5,500
1892	4,233	87,500	508	10,506
1893	8,515	176,000	466	9,640
1894	6,047	125,000	725	15,000
1895	12,095	250,000	2,419	50,000
1896	14,514	300,000	2,661	55,000
1897	120,948	2,500,000	2,419	50,000
1898	483,793	10,000,000	1,209	25,000
1899	774,069	16,000,000	726	15,000
1900	1,077,649	22,275,000	242	5,000
1901	870,827	18,000,000	726	15,000
1902	701,500	14,500,000	484	10,000
1903	592,646	12,250,000	48	1,000
1904	507,983	10,500,000	24	500
1905	402,864	8,327,200	121	2,500
Total	5,606,710	115,890,700	14,366	296,946

* Calculated from the value at the rate of $20.67 per ounce.

The following statement of gold production of the Yukon royalty paid, etc., is taken from the report of the Timber and Mines Branch of the Department of the Interior :—

Fiscal Year.	Total Gold Production.	Total Exemption.	Royalty Collected on.	Royalty Paid.
	$	$	$	$
1898	3,072,773	339,845	2,732,928	273,292
1899	7,582,283	1,699,657	5,882,626	588,262
1900	9,809,464	2,501,744	7,307,720	730,771
1901	9,162,082	1,927,666	7,236,522	592,660
1902	9,566,340	1,199,114	8,367,225	331,436
1903	12,113,015		12,113,015	302,893
1904	10,790,663		10,790,663	272,217
1905	8,222,054		8,222,054	206,760

British Columbia.—The value of the output of gold in British Columbia in 1905 was, $5,902,402 as compared with $5,704,908 in 1904 an increase of $197,494 or nearly 3½ per cent. Of the output of 1905 $969,300 was derived from placer workings, dredging, hydraulicing, &c., and $4,933,102 from lode ores.

The Provincial Mineralogist in his report to the Minister of Mines for the province, gives the special features of the gold production during the year as follows :

"The production of placer gold this past year is valued at $969,300 a decrease of some $146,000, or 13 per cent as compared with that of 1904, and is the smallest output made any year since 1901. This falling off in production is attributable to a very dry summer, preceded by a winter with little snow, with a resulting decreased supply of water for hydraulicing, in which class of mining the output seems to be in direct proportion to the water available for use, since the deposits of gravel seem to be fairly regular in their tenure of gold, and the output is measured by the amount of gravel washed.

"In the Atlin district, the output this past year was about $475,000, considerably less than in 1904, but still in excess of any year previous to that.

"In this district the drought was not so severely felt, as about 40 per cent of the gold is mined by 'individual' methods in which a large amount of water is not necessary.

"In the Dease lake section of Cassiar, mining is carried on largely by hydraulic methods, and between the dryness of the season and the obstacles presented in getting in over a long pack trail, the season was not successful.

"The Cariboo Mining Division of the Cariboo district about held its own this past season, but the production of the Quesnel division was some 40 per cent less, owing to the very short run made by the largest producing property—The Consolidated Cariboo—due to an unprecedentedly low water supply, a trouble which the company has set about remedying by bringing in water from another watershed to supplement the present supply, at the expenditure of a large amount of money.

"In the Fraser River district, the dry season should not have had so much effect, but individual mining on the bars appears to have been replaced by dredging, and the dredges have not met the expectations of the operators, for the reason, it is claimed, that the dredges built have proved to have been of too weak construction, and were so constantly under repair as to reduce the actual working time below the margin of profit.

"Steam shovels have not yet been fully proven, and the one formerly operated in south east Kootenay, has been, at least temporarily abandoned.

"The Atlin shovel apparently worked very well, but the appliances for handling the tailings and for washing the gravel proved quite inadequate, so much so that the capacity of the shovel was never fully demonstrated. Enough was learned, however, to indicate that for our conditions in the north, the steam shovel is apt to prove much more effective than the dredge.

"The value of the output of gold from this province from lode mining for the year 1905 was $4,933,102, an increase over the preceding year of some $343,494 or about 7½ per cent due entirely to the increased tonnage of gold-bearing copper ore smelted in the Boundary district.

"The greater part of the lode gold produced is found in combination with copper; in fact only 11 per cent of the total gold is produced from stamp-mills and even in these mills about half the values are obtained in concentrates, which are afterwards smelted."

Statistics of the yearly production in this province since 1858 are given in table 10, and detailed statistics of the production by districts are shown in table 11.

TABLE 10.

PRECIOUS METALS.

GOLD:—BRITISH COLUMBIA:—ANNUAL PRODUCTION.

Calendar Year.	Value.	Calendar Year.	Value.
1858	$ 705,000	1882	$ 954,085
1859	1,615,072	1883	794,252
1860	2,228,543	1884	736,165
1861	2,666,118	1885	713,738
1862	2,656,903	1886	903,651
1863	3,913,563	1887	693,709
1864	3,735,850	1888	616,731
1865	3,491,205	1889	588,923
1866	2,662,106	1890	494,436
1867	2,480,868	1891	429,811
1868	2,372,972	1892	399,525
1869	1,774,978	1893	379,535
1870	1,336,956	1894	530,530
1871	1,799,440	1895	1,266,954
1872	1,610,972	1896	1,788,206
1873	1,305,749	1897	2,724,657
1874	1,844,618	1898	2,939,852
1875	2,474,904	1899	4,202,473
1876	1,786,648	1900	4,732,105
1877	1,608,182	1901	5,318,703
1878	1,275,204	1902	5,961,409
1879	1,290,058	1903	5,873,036
1880	1,013,827	1904	5,704,908
1881	1,046,737	1905	5,902,402

TABLE 11.

PRECIOUS METALS.

GOLD: BRITISH COLUMBIA. PRODUCTION BY DISTRICTS—1905.

Districts.	Gold, Placer.		Gold, Lode.	
	Ounces.	Value.	Ounces.	Value.
		$		$
Cariboo				
Cariboo Division	15,000	300,000		
Quesnel "	4,800	96,000		
Omineca "	500	10,000		
Cassiar—				
Atlin Lake Division	23,750	475,000		
All other divisions	1,250	25,000	187	3,865
East Kootenay—				
Fort Steele Division	708	14,160		
Other divisions	50	1,000	14	289
West Kootenay				
Ainsworth Division			28	579
Nelson "	150	3,000	17,667	365,177
Slocan and Slocan City			134	2,770
Trail Creek			129,843	2,683,855
All other divisions	280	5,600	2,707	55,954
Lillooet	1,500	30,000	125	2,584
Yale:				
Grand Forks, etc	90	1,800	78,689	1,626,501
Similkameen	57	1,140	19	393
Yale	230	4,600	610	12,608
Coast and other districts	100	2,000	8,637	178,527
Totals	48,465	969,300	238,660	4,933,102

The following tables show the production of the Rossland mines and illustrate the average results attained during the past twelve years:—

NET PRODUCTION PER SMELTER RETURNS.

Year.	Ore, tons, 2,000 lb.	Gold, oz.	Silver, oz.	Copper, lb.	Value.
1894	1,856	3,723	5,357	106,229	$ 75,510
1895	19,693	31,497	46,762	840,420	702,459
1896	38,075	55,275	89,285	1,580,635	1,243,360
1897	68,804	97,024	110,068	1,819,586	2,097,280
1898	111,282	87,343	170,804	5,232,011	2,470,811
1899	172,665	102,976	185,818	5,693,889	3,229,086
1900	217,636	111,625	167,378	2,071,865	2,739,300
1901	283,360	132,333	970,460	8,333,446	4,621,299
1902	329,534	162,146	373,101	11,667,807	4,893,395
1903	360,786	145,353	209,537	8,652,127	4,255,958
1904	312,991	133,095	181,830	7,119,876	3,760,866
1905	330,618	129,843	147,753	5,800,294	3,672,828

AVERAGE NET SMELTER RETURNS OR ACTUAL YIELD PER TON.

Year.	Gold.	Silver.	Copper.	Value.
	Ounces.	Ounces.	Per cent.	$ cts.
1894	2·00	2·89	2·85	40.69
1895	1·60	2·41	2·10	35.67
1896	1·45	2·34	2·08	32.65
1897	1·42	1·60	1·32	30.48
1898	·78	1·54	2·35	22.10
1899	·596	1·07	1·65	18.70
1900	·513	769	·476	12.58
1901	·467	3·424	1·470	16.31
1902	·492	1·132	1·770	14.85
1903	403	·581	1·199	11.80
1904	·425	·581	1·137	12.01
1905	·393	·447	·877	11·11

SILVER.

Silver is produced in Canada in the provinces of Quebec, Ontario and British Columbia and a certain quantity is also recovered from the placer gold found in the Yukon. The total output in Canada in 1905 was 5,994,292 ounces valued at $3,617,675 or 60·35 cents per ounce, the average value of fine silver in New York for the year. Compared with the output in 1904 an increase in quantity of 2,416,766 ounces or 67 per cent is shown and in value of $1,570,580 or over 76 per cent. This large increase is due in a measure to the doubling of the output of argentiferous lead ore from East Kootenay, B.C., but chiefly to a large output from the recently opened up native silver deposits at Cobalt, Ontario.

Statistics of the production of silver are shown in Table 12, while the details of provinces are given in Table 13.

TABLE 12.

PRECIOUS METALS.

SILVER.—ANNUAL PRODUCTION.

Year.	Ounces.	Value.	Average Price per ounce.	Year.	Ounce.	Value.	Average Price per ounce.
		$	Cts.			$	Cts.
1887....	355,083	347,271	98·0	1897....	5,558,446	3,323,395	59·79
1888....	437,232	410,998	94·0	1898....	4,452,333	2,593,929	58·26
1889....	383,318	358,785	93·6	1899....	3,411,644	2,032,658	59·58
1890....	400,687	419,118	104·6	1900....	4,468,225	2,740,362	61·33
1891....	414,523	409,549	98·0	1901....	5,539,192	3,265,354	58·95
1892....	310,651	272,130	86·0	1902....	4,291,317	2,238,351	52·16
1893....	.....	330,128	77·0	1903....	3,198,581	1,709,642	53·45
1894....	847,697	534,049	63·0	1904....	3,577,526	2,047,095	57·22
1895....	1,578,275	1,030,299	65·28	1905....	5,994,292	3,617,675	60·35
1896....	3,205,343	2,149,503	67·06				

TABLE 13.

PRECIOUS METALS.

SILVER.—PRODUCTION BY PROVINCES.

Calendar Year.	Ontario.		Quebec.		British Columbia.		Yukon Territory.	
	Ounces.	Value.	Ounces.	Value.	Ounces.	Value.	Ounces.	Value.
		$		$		$		$
1887..	190,495	186,304	146,898	143,666	17,690	17,301	.....	.....
1888..	208,064	195,580	149,388	140,425	79,780	74,993	.....	.....
1889..	181,609	169,986	148,517	139,012	53,192	49,787	.....	.....
1890..	158,715	166,016	171,545	179,436	70,427	73,666	.....	.....
1891..	225,633	222,926	185,584	183,357	3,306	3,266	.....	.....
1892..	41,581	36,425	191,910	168,113	77,160	67,592	.....	.....
1893..	.....	8,689	.....	126,439	.....	195,000	.....	.....
1894..	.....	.....	101,318	63,830	746,379	470,219	.....	.....
1895..	.....	.....	81,753	53,369	1,496,522	976,930	.....	.....
1896..	.....	.....	70,000	46,942	3,135,343	2,102,561	.....	.....
1897..	5,000	2,990	80,475	48,116	5,472,971	3,272,289	.....	.....
1898..	85,000	49,521	74,932	43,655	4,292,401	2,500,753	.....	.....
1899..	202,000	120,352	40,231	23,970	2,939,413	1,751,302	230,000	137,034
1900..	161,650	99,140	58,400	35,817	3,958,175	2,427,548	290,000	177,857
1901..	151,400	89,250	41,459	24,440	5,151,333	3,036,711	195,000	114,953
1902..	145,000	75,632	42,500	22,163	3,917,917	2,043,586	185,900	96,965
1903..	17,777	9,502	28,600	15,287	2,996,204	1,601,471	156,000	83,382
1904..	206,875	118,376	15,000	8,583	3,222,481	1,843,935	133,170	76,201
1905..	2,441,000	1,473,192	19,620	11,841	3,439,417	2,075,757	94,255	56,885

Since 1894, the argentiferous lead ores of British Columbia have been responsible for the greater part of the silver output in Canada,

over ninety per cent being obtained from that province. In 1905, however, the large silver production at Cobalt, Ontario, has somewhat reduced the relative importance of the western province in the total output. The proportions in this year were Ontario nearly 41 per cent, British Columbia 57 per cent.

Quebec.—The output from the Province of Quebec is represented by the small amount contained in the pyrite ore mined in the vicinity of Capelton in the Eastern Townships.

Ontario.—In this province the chief interest centres, of course, about the recent discoveries of very rich silver ores at Cobalt on the Temiscaming and Northern Ontario railway.

Descriptions of this camp are to be found in the Summary report of the Director of the Geological Survey and in a special report by Mr. W. G. Miller, the Provincial Geologist, issued by the Bureau of Mines of Ontario to which reference may be made for details.

A short visit of a few days was made by Mr. Ingall also.

The peculiar features of this camp consist in the small thickness of the veins which is, however, more than offset by their great number and wide distribution and the great richness of their contents.

In the prominence of native silver as a constituent of the ores and in their cutting a younger, flat-lying sedimentary formation over-lying Archæan rocks as well as in the presence of basic intrusives, they show some similarity to the well known silver veins of the Thunder Bay district worked for several years with startling results.

Whilst these points of similarity exist, however, there are many prominent features in which the two districts differ.

At Cobalt smaltite and niccolite are prominent whilst they were rare constituents of the Thunder bay ores in which zinc-blende and galena were most largely in evidence.

In the latter case too, an almost constant association of the rich ore bodies was the carbonaceous character of the enclosing country rocks a phenomenon not characteristic of the Cobalt camp. Then too, in the Port Arthur district the veins were much thicker and more persistent but less in number.

The similarity of the Geological formation enclosing the Cobalt veins is with th rocks exhibited in the typical Huronian district of Bruce Mines and other places along that belt rather than with the Animikie of Thunder bay.

British Columbia.—The production by districts in British Columbia is shown in the following table.

TABLE 14.

PRECIOUS METALS.

SILVER:—BRITISH COLUMBIA. PRODUCTION BY DISTRICTS.

District.	1902.	1903.	1904.	1905.
	Ounces.	Ounces.	Ounces.	Ounces.
Cariboo	4	.....	.....	.....
Cassiar	224	53	185	477
Kootenay East				
Fort Steele division	114,506	28,537	590,186	1,137,872
Other divisions	27,918	59,006	20,964	16,880
Kootenay West—				
Ainsworth division	320,719	108,678	90,004	99,781
Nelson "	273,870	190,003	198,795	116,729
Slocan "	2,223,810	1,466,931	1,540,170	1,045,948
Trail Creek "	373,101	209,537	181,830	147,753
Other divisions	241,584	392,354	148,201	121,551
Lillooet	.....	12	.....	.....
Yale—				
Osoyoos division	219,798	320,749	245,155	630,407
Yale	542	15	625	3,863
Coast and other districts	121,841	220,329	206,366	118,156
Totals	3,917,917	2,996,204	3,222,481	3,439,417

According to the provincial mineralogist: "About 70 per cent of silver produced in the province was found associated with lead in argentiferous galena, the remainder being chiefly in conjunction with copper ores.

"The total silver production was 3,439,417 ounces, valued at $1,971,818, the largest output the province has made since 1901 despite the fact of a decrease in the Slocan of 494,000 ounces. The increase is due primarily to the extensive working this year of the low grade argentiferous galena of the Fort Steele district, which district shows an increased production of nearly 550,000 ounces; and secondly to the increased tonnage of the large copper mines in the Boundary and the working of certain smaller but higher grade properties in that district, resulting in an increased silver production in the Boundary of about 385,000 ounces."

TABLE 15.

PRECIOUS METALS.

SILVER.—EXPORTS OF ORE.

Calendar Year.	Value.	Calendar Year.	Value.
1886	$ 25,957	1896	$ 2,271,959
1887	206,284	1897	3,576,391
1888	219,008	1898	2,902,277
1889	212,163	1899	1,623,905
1890	204,142	1900	2,341,872
1891	225,312	1901	2,026,727
1892	56,688	1902	1,820,058
1893	213,695	1903	1,989,474
1894	359,731	1904	1,904,394
1895	994,354	1905	2,777,218

Yukon.—As already stated the silver output credited to the Yukon represents that alloyed with the gold yielded by the placers worked in that district.

The discoveries of promising deposits of rich silver ores in the most southerly portion of the Territory on the Windy Arm of Tagish lake, seem to give promise of another fruitful source of the metal. These discoveries are described by Mr. R. G. McConnell in a bulletin recently issued by the Geological Survey.

According to his description there would seem to be a series of strong and persistent veins carrying silver in the form of sulph-antimonides and sulph-arsenides with some native silver, argentite, etc., accompanied by sulphurets of copper, iron, zinc, etc.

COPPER.

The special features of interest in the copper output of Canada in 1905 were the greatly increased production of copper from the nickel copper ores of the Sudbury district, Ontario, and the continued increase in the output of the low grade copper ores of the Boundary district, British Columbia.

The higher prices ruling for copper during the year have also stimulated the exploration and development of both new and old copper properties through the Dominion, and a continuation of these prices will no doubt tend toward a considerable increase in output in the near future.

So far, most of the ores from which copper is obtained in Canada contain considerable values in other constituents. In Quebec the copper is derived from the pyrite deposits near Sherbrooke, which are primarily mined for the manufacture of sulphuric acid but which contain also, in addition to the copper, slight values in gold and silver. The production in Ontario is still practically represented by the copper contents of the nickel-copper ores of the Sudbury district, which contain also values in gold, silver, cobalt and the platinum group of metals. In British Columbia much the greater part of the output is now derived from the low grade sulphide ores of the Boundary district, the values of which in gold and silver would enable them to be worked at a profit, it is believed, even should the price of copper fall much below its present high level.

The total production of copper in Canada, in 1905, was 48,092,753 pounds, valued at $7,497,660, and is the highest output yet recorded, being an increase over 1904, of 6,709,031 pounds or 16.21 per cent, and more than twice the output of any year previous to 1901. The value given is at the average price for the year of refined copper in New York.

Owing to the higher prices prevailing during 1905, the increase in total value was over 41 per cent.

The production by Provinces was as follows :—

Quebec	1,621,243 lbs.
Ontario	8,779,259 "
British Columbia	37,692,251 "
Total	48,092,753 "

It will thus be seen that of the total output, British Columbia contributed in 1905, over 78 per cent., Ontario over 18 per cent. and Quebec a little over three per cent.

Statistics of production, exports and imports, are given in the following tables :—

TABLE 1.

COPPER.

ANNUAL PRODUCTION.*

Calendar Year.	Lbs.	Increase or Decrease.		Value.	Increase or Decrease.		Average Price per Pound.
		Lbs.	%	$	$	%	Cts
1886.....	3,505,000	.....	.....	385,550	.....	.....	11·00
1887.....	3,260,424	244,576	6·99	366,798	18,752	4·86	11·25
1888.....	5,562,864	2,302,440	70·60	927,107	560,309	152·70	16·66
1889.....	6,809,752	1,246,888	22·40	936,341	9,234	0·99	13·75
1890.....	6,013,671	796,081	11·69	947,153	10,812	1·15	15·75
1891.....	9,529,401	3,515,730	58·46	1,226,703	279,550	29·51	12·87
1892.....	7,087,275	2,442,126	25·63	818,580	408,123	33·27	11·55
1893.....	8,109,856	1,022,381	14·40	871,809	53,229	6·50	10·75
1894.....	7,708,789	401,067	4·94	736,960	134,849	15·46	9·56
1895.....	7,771,639	62,850	·81	836,228	99,268	13·47	10·76
1896.....	9,393,012	1,621,373	20·86	1,021,960	185,732	22·21	10·88
1897.....	13,300,802	3,907,790	41·60	1,501,660	479,700	46·94	11·29
1898.....	17,747,136	4,446,334	33·43	2,134,980	633,320	42·17	12·03
1899.....	15,078,475	2,668,661	15·04	2,655,319	520,339	24·37	17·61
1900.....	18,937,138	3,858,663	25·59	3,065,922	410,603	15·46	16·19
1901.....	37,827,019	18,889,881	99·75	6,096,581	3,030,659	98·84	16·117
1902.....	38,804,259	977,240	2·58	4,511,383	1,585,198	26·00	11·626
1903.....	42,684,454	3,880,195	10·00	5,649,487	1,138,104	25·23	13·235
1904.....	41,383,722	1,300,732	3·05	5,306,635	342,852	6·07	12·823
1905.....	48,092,753	6,709,031	16·21	7,497,660	2,191,025	41·29	15·590

* The production is altogether represented by the copper contained in ore, matte, &c., produced and shipped valued at the average market price for the year for fine copper in New York.

Note.—In the above table, increases are shown underlined, and decreases in the ordinary way.

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TABLE 2.

COPPER.

EXPORTS OF COPPER IN ORE, MATTE, ETC.

Calendar Year.	Pounds.	Value.
		$
1885		262,600
1886		249,259
1887		137,966
1888		257,260
1889		168,457
1890		398,497
1891		348,104
1892		277,632
1893	4,792,201	269,160
1894	1,625,389	91,917
1895	3,742,352	236,965
1896	5,462,052	281,070
1897	14,022,610	850,336
1898	11,572,381	840,243
1899	11,371,766	1,199,908
1900	23,631,523	1,741,885
1901	32,488,872	3,404,908
1902	26,094,498	2,476,516
1903	38,364,676	3,873,827
1904	38,553,282	4,216,214
1905	40,740,861	5,443,873

TABLE 3.

COPPER.

IMPORTS OF PIGS, OLD, SCRAP, ETC.

Fiscal Year.	Lbs.	Value.	Fiscal Year.	Lbs.	Value.
		$			$
1880	31,900	2,130	1893	168,300	16,331
1881	9,800	1,157	1894	101,200	7,397
1882	20,200	1,984	1895	72,062	6,770
1883	124,500	20,273	1896	86,905	9,226
1884	46,200	3,180	1897	49,000	5,449
1885	28,600	2,016	1898	1,050,000	80,000
1886	82,000	6,969	1899	1,655,000	246,740
1887	40,100	2,507	1900	1,144,000	180,990
1888	32,300	2,322	1901	951,500	152,274
1889	32,300	3,288	1902	1,767,200	225,832
1890	112,200	11,521	1903	2,038,400	252,594
1891	107,800	10,452	1904	2,115,300	270,315
1892	343,600	14,894			

1905	Copper, old and scrap or in blocks	Duty free		222,000	25,371
	Copper in pigs or ingots	"		1,722,400	241,177
	Total, 1905			1,944,400	266,548

TABLE 4.

COPPER.

IMPORTS OF MANUFACTURES.

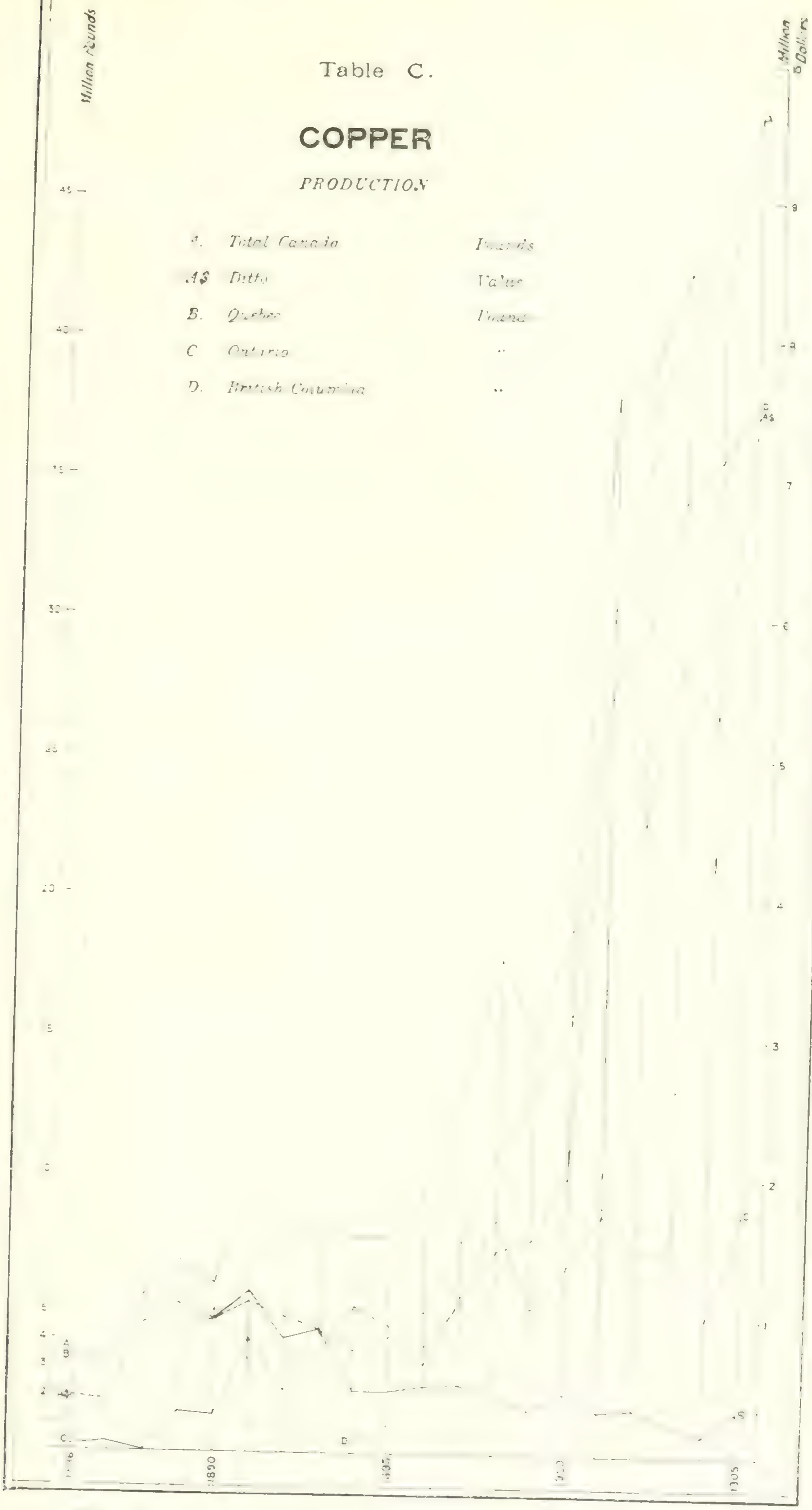
Fiscal Year.	Value.
	$
1880	123,061
1881	159,163
1882	220,235
1883	247,141
1884	134,534
1885	181,469
1886	219,420
1887	325,365
1888	303,459
1889	402,216
1890	472,668
1891	563,522
1892	422,870
1893	458,715
1894	175,404
1895	251,615
1896	285,220
1897	264,587
1898	786,529
1899	551,586
1900	1,090,280
1901	951,045
1902	1,281,522
1903	1,291,635
1904	1,191,610

			Duty.	Pounds.	$
1905.	Copper in bolts, bars and rods, in coils, or otherwise in lengths not less than 6 feet, unmanufactured		Free.	8,634,900	1,231,729
	Copper, in strips, sheets or plates, not planished or coated, &c		"	2,054,600	347,877
	Copper tubing in lengths not less than 6 feet, and not polished, bent or otherwise manufactured		"	326,154	77,587
	Copper rollers, for use in calico printing, imported by calico printers for use in their own factories		"		9,762
	Copper and manufactures of:—				
		Nails, tacks, rivets and burrs or washers	30 p. c.		3,043
		Wire, plain, tinned or plated	15 "	176,744	24,766
		Wire cloth, &c	25 "		1,870
		All other manufactures of, N.O.P	30 "		79,247
	Total				1,775,881

Table C.

COPPER

PRODUCTION



Quebec.—As usual, the copper production in Quebec was derived chiefly from the pyrites ores of the Eastern Townships, which are mined primarily for the manufacture of sulphuric acid.

The Ascot mine on the west half of lot 8. Con. VIII of Ascot was worked for a short time, producing a small quantity of good grade ore which was treated at Capelton.

Statistics of production are given in table 5 below.

TABLE 5,

COPPER.

QUEBEC :—PRODUCTION.

Calendar Year.	Pounds.	Value.
		$
1886	3,340,000	367,400
1887	2,937,900	330,514
1888	5,562,864	927,107
1889	5,315,000	730,813
1890	4,710,606	741,920
1891	5,401,704	695,469
1892	4,883,480	564,042
1893	4,468,352	480,348
1894	2,176,430	208,067
1895	2,242,462	241,288
1896	2,407,200	261,903
1897	2,474,970	279,424
1898	2,100,235	252,658
1899	1,632,560	287,494
1900	2,220,000	359,418
1901	1,527,442	246,178
1902	1,640,000	190,666
1903	1,152,000	152,467
1904	760,000	97,445
1905	1,621,243	252,752

Ontario—Statistics of the production of copper in Ontario since 1886 are shown in Table 6. This has nearly all been derived from the nickel-copper ores of Sudbury. The total quantity of nickel copper ore mined during the year was 277,766 tons, while 251,421 tons were smelted, producing 17,388 tons of high grade matte. The quantity of matte shipped during the year was 17,405 tons while 2,675 tons remained in stock at the close of the year. The copper contents of the matte shipped, including a small output of copper from a couple of mines in process of development was 8,779,259 pounds valued at $1,386,686.

Two copper properties were being developed at Massey station during the year, but these have not yet become serious factors so far as output is concerned.

TABLE 6.

COPPER.

ONTARIO:—PRODUCTION.

Calendar Year.	Pounds.	Value.
		$
1886	165,000	18,150
1887	322,524	36,284
1888	Nil.	Nil.
1889	1,466,752	201,678
1890	1,303,065	205,233
1891	4,127,697	531,234
1892	2,203,795	254,538
1893	3,641,504	391,461
1894	5,207,679	497,854
1895	4,576,337	492,414
1896	3,167,256	344,598
1897	5,500,652	621,023
1898	8,375,223	1,007,539
1899	5,723,324	1,007,877
1900	6,740,058	1,091,215
1901	8,695,831	1,401,507
1902	7,408,202	1 861,278
1903	7,172,533	949,285
1904	4,913,594	630,070
1905	8,779,259	1,368,686

British Columbia—As compared with the previous year, the copper production in British Columbia shows an increase in 1905 of over 5 per cent., the total output being 37,692,251 pounds. Of this amount, over 73 per cent was derived from the Boundary district, chiefly from the Granby mines, at Phoenix, the B.C. Copper Company (Mother Lode) at Deadwood and the Dominion Copper Company (Brooklyn, Stemwinder and Rawhide) at Phoenix; 15 per cent. was obtained from the Rossland Camp, the principal mines contributing being Le Roi, Centre Star, War Eagle, Le Roi No. 2, and Jumbo. Nine per cent.

was obtained from the Coast districts, chiefly contributed by the Tyee and Marble Bay Mines.

Statistics of production are shown in tables 7 and 8.

TABLE 7.

COPPER.

BRITISH COLUMBIA—PRODUCTION.

Calendar Year.	Copper contained in ores, matte, &c.	Increase.		Value.
	Lb.	Lb.	%	
1894	324,680			$ 31,039
1895	952,840	628,160	193	102,526
1896	3,818,556	2,865,716	301	415,459
1897	5,325,180	1,506,624	39	601,213
1898	7,271,678	1,946,498	36	874,783
1899	7,722,591	450,913	6	1,359,948
1900	9,977,080	2,254,489	29	1,615,289
1901	27,603,746	17,626,666	177	4,448,896
1902	29,636,057	2,032,311	7	3,445,488
1903	34,359,921	4,723,864	16	4,547,735
1904	35,710,128	1,350,207	3·7	4,579,110
1905	37,692,251	1,982,123	5·6	5,876,222

IRON.

Iron Ore.—The production of iron ore in Canada in 1905 is estimated at about 291,097 tons as compared with 219,046 tons in the previous year, an increase of 72,051 tons, or over 32 per cent.

Although there are numerous iron prospects and properties of possible great potential value in Canada, the actual output of ore is obtained from a very few mines.

In Nova Scotia the only iron mining done was by the Londonderry Iron and Mining Company, at their mines near Londonderry, Colchester county, and Torbrook, Annapolis county. The total output was 84,952 tons and was all utilized at the Company's blast furnaces at Londonderry.

In Quebec the bog ores of Champlain, Joliette, Drummond, and Nicolet counties, were as usual mined and used in the furnaces at Radnor Forges and Drummondville, the output of these ores for the year being 12,681 tons.

In Ontario comparatively small shipments were made from the Radnor mine, Eganville, Renfrew county, the greater part of the output coming from the Helen mine at Michipicoten. The total output was 193,464 tons. The output of the Radnor mine was used in the furnaces at Radnor Forges, Que., while of the output of the Helen mine, a little over 60 per cent. was exported to lower Lake Erie ports, the balance going chiefly to Hamilton, Ont.

No production was recorded for British Columbia.

TABLE 1.

IRON.

PRODUCTION OF ORE BY PROVINCES.

Calendar Year.	Nova Scotia.	Quebec.	Ontario.	British Columbia.	Total.
	Tons.	Tons.	Tons.	Tons	Tons.
1886	44,388		16,032	3,941	64,361
1887	43,532	13,401	16,598	2,796	76,330
1888	42,611	10,710	16,894	8,372	78,587
1889	54,161	14,533		15,487	84,181
1890	49,206	22,305			76,511
1891	53,649	14,380		950	68,979
1892	78,258	22,690		2,300	103,248
1893	102,201	22,076		1,325	125,602
1894	89,379	19,492		1,120	109,991
1895	83,792	17,783		1,222	102,797
1896	58,810	17,630	15,270	196	91,906
1897	23,400	22,436	2,770	2,099	50,705
1898	19,079	17,873	21,111	280	58,343
1899	28,000	19,420	25,126	2,071	74,617
1900	18,940	19,000	82,950	1,110	122,000
1901	18,619	15,489	272,538	7,000	313,646
1902	16,172	18,524	359,288	10,019	404,003
1903	40,335	12,035	209,634	2,290	264,294
1904	61,293	16,152	141,601		219,046
1905	84,952	12,681	193,464		291,097

TABLE 2.

IRON.

NOVA SCOTIA:—ANNUAL PRODUCTION OF ORE.

(Previous to 1886).

Calendar Year.	Tons.	Calendar Year.	Tons.
1876	15,274	1881	39,843
1877	16,879	1882	42,135
1878	36,600	1883	52,410
1879	29,889	1884	54,885
1880	51,193	1885	48,129

The exports of iron ore from Canada, as compiled from Custom-Reports, are shown in tables 3 and 4 for the calendar and fiscal years respectively. Nearly all the iron ore exported goes to the United States. Table 4a, which has therefore been added to show the quantity of iron ores imported into the United States from Canada, has been compiled from 'The Foreign Commerce and Navigation of the United States' published at Washington.

A comparison of table 4 and 4a, shows large discrepancies for the years 1901 to 1905, inclusive. The Canadian figures of exports for these years are evidently much too high, and an investigation has shown that an error had crept into the Customs returns, owing to a duplication of certain entries.

TABLE 3.

IRON.

EXPORTS OF IRON ORE.

Calendar Year.	Tons.	Value.	Calendar Year.	Tons.	Value.
		$			
1893	2,419	7,590	1900	5,527	13,511
1894		21,294	1901*	306,199	762,283
1895	1,571	3,909	1902*	428,901	1,065,019
1896	1,033	1,911	1903*	368,233	922,571
1897	403	811	1904*	168,828	401,738
1898	182	278	1905*	168,289	407,881
1899	4,145	9,538			

*The export figures for these years are incorrect owing to a duplication of entries in Customs returns.

TABLE 4.

IRON.

EXPORTS OF IRON ORE.

Fiscal Year ending June 30	Tons.	Value.	Fiscal Year.	Tons.	Value.
		$			$
1879	3,562	7,530	1893	7,811	26,114
1880	30,524	76,474	1894	1,859	9,026
1881	44,677	114,850	1895	2,315	5,743
1882	43,835	135,463	1896	14	35
1883	44,914	138,775	1897	1,320	2,492
1884	25,308	66,549	1898	260	402
1885	54,367	132,074	1899	1,849	4,968
1886	7,542	23,039	1900	4,327	7,689
1887	23,345	71,934	1901*	58,401	150,657
1888	13,544	39,945	1902*	525,983	1,303,901
1889	24,752	60,289	1903*	293,510	733,230
1890	13,811	31,376	1904*	233,850	579,883
1891	14,648	32,582	1905*	224,908	540,909
1892	7,707	36,935			

*See foot note to table 3.

TABLE 4a.

IRON.

IMPORTS OF IRON ORE INTO THE UNITED STATES FROM CANADA.*

Year ending June 30.	Tons.	Year ending June 30.	Tons.
1893	6,880	1900	3,997
1894	269	1901	30,762
1895	2,394	1902	276,363
1896	35	1903	129,219
1897	2,263	1904	113,388
1898	1,172	1905	107,358
1899	2,308		

* Compiled from the "Foreign Commerce and Navigation of the United States.'

Pig iron.—A very substantial growth has been made in the pig iron industry in Canada in recent years, though unfortunately a very large proportion of the iron ore used has been imported. The total quantity of the pig iron made in Canada in 1905, from both Canadian and imported ores was 525,306 tons, valued at the furnaces at $6,475,186 or an average of $12.33 per ton. The output in 1904 was 303,454 tons valued at $3,687,985, or an average of $12.15 per ton, so that an increase is shown in 1905 of 221,852 tons or over 73 per cent. Five years ago the production was about 100,000 tons, while ten years ago it was less than 50,000. Statistics of the production of pig iron, together with the iron ore, fuel and flux used, are given in table 5 for the years 1887 to 1905, inclusive. Previous to 1896 the pig iron manufactured was entirely from Canadian ore. Since that date, however, increasing quantities of imported ore have been used, which will be found separately stated in the table.

It is a matter of regret that an industry of such increasing importance, and to which so much assistance has been given, should be dependent, to such an extent, on imported raw material. A total of 978,821 tons of iron were charged to Canadian blast furnaces in 1905, and of this amount 861,847 tons, or 88 per cent, were imported chiefly from Newfoundland and the south shore of Lake Superior. The Canadian ore charged in 1905 amounted to only 116,974 tons compared with 180,932 tons in 1904, and 156,613 tons in 1901, while as long ago as 1893, 124,053 tons of Canadian ore were used and 60,432 tons in 1887. Considerable attention, however, is being paid at present to Canadian iron ore deposits, and it is quite possible that in the near future an increasing proportion of these ores will be used.

TABLE 5.

IRON.

PIG IRON PRODUCTION: CONSUMPTION OF ORE, FUEL, &c.

CALENDAR YEAR.	IRON ORE CONSUMED.		FUEL CONSUMED.						FLUX CONSUMED.		PIG IRON MADE.		
			Charcoal.		Coke.		Coal.						
	Tons.	Value.	Bushels.	Value.	Tons.	Value.	Tons.	Value.	Tons.	Value.	Tons.	Value.	Value per ton.
1887	60,434	$130,808	940,400	$ 48,593	30,248	$ 89,123	3,333	$ 5,877	17,171	$ 17,500	24,827	$366,192	$ 14.75
1888	54,956	102,343	804,286	41,800	28,031	82,986	2,197	4,709	16,857	16,533	21,799	313,235	14.37
1889	65,670	126,064	755,800	41,568	33,289	94,791	3,044	6,525	22,122	21,999	25,921	499,872	19.28
1890	57,304	117,880	589,860	29,493	32,832	97,659	1,241	2,638	18,478	18,361	21,772	331,688	15.23
1891	60,935	130,955	441,812	22,091	30,626	98,402	2,170	2,868	11,377	11,546	23,891	368,901	15.44
1892	96,948	250,966	1,121,365	78,291	50,882	152,311	1,740	1,797	22,967	21,687	42,443	637,421	15 02
1893	124,053	296,979	1,302,720	90,976	58,711	163,849	6,621	13,539	27,797	27,519	55,947	790,283	14.13
1894	108,871	223,861	1,173,970	53,958	52,373	142,303	7,653	14,571	35,101	34,347	49,967	646,447	12.94
1895	93,208	218,336	789,561	31,582	48,540	139,475	3,089	5,396	31,585	29,922	42,454	586,736	13.82
1896	(a) 96,560	200,887	756,600	32,256	(a) 48,660	106,939	1,407	2,288	37,462	36,140	67,268	924,129	13.74
	(b) 46,300	100,205			(b) 33,990	109,253							
1897	(a) 53,658	131,705	1,031,800	43,230	(a) 35,800	71,600	....	.....	31,273	30,258	58,007	738,701	12.73
	(b) 55,722	138,504			(b) 27,810	94,553							
1898	(a) 57,881	151,760	836,400	41,820	(a) 31,952	63,904	.....	.....	33,913	31,153	77,015	912,395	11.85
	(b) 77,107	213,165			(b) 50,407	158,783							
1899	(a) 66,381	216.322	1,928,025	87,858	(a) 44,841	134,532	.....	.....	51,826	44,286	102,940	1,377,306	13.38
	(b)120,650	402,860			(b) 64,648	193,944							
1900	(a) 71,341	184,191	1,799,737	82,408	(a) 45,021	180,084	.....	.....	52,966	39,332	96,575	1,501,698	15.55
	(b)113,042	351,382			(b) 59,345	255,892							
1901	(a)156,613	544,144	1,835,736	100,978	(a)205,796	539,328	2,039	6,117	169,399	183,162	274,376	3,512,923	12.80
	(b)361,010	846,398			(b)115,367	497,386							
1902	(a)125,664	429,753	2,116,623	118,275	(a)360,593	898,518	1,615	5,006	293,594	219,295	357,902	4,243,541	11.85
	(b)559,381	964,979			(b)112,314	494,433							
1903	(a) 82,035	247,229	2,322,030	152,717	(a)350,190	819,016	.....	.....	277,452	249,251	297,885	3,742,710	12 56
	(b)485,911	823,147			(b) 96,540	556,091							
1904	(a)180,932	489,687	3,477,470	191,404	(a)257,182	729,585	.....	.....	211,278	177,595	303,454	3,687,985	12.15
	(b)454,671	922,594			(b)130,210	551,445							
1905	(a)116,974	351,965	4,404,394	222,156	(a)365,897	962,518	....	.....	369,715	282,711	525,306	6,475,186	12 33
	(b)861,847	1,802,539			(b)243,882	1,233,515							

(a) Canadian. (b) Imported.

In the tabulated statement showing the mineral production of Canada, the production from Canadian ore only is given. This has been arrived at by separating the total production at each furnace into two classes, viz. : pig iron from Canadian ore and pig iron from imported ore, the separation being made on the basis of the Canadian and imported ore entering into the production of pig iron at each respective furnace.

The production for the past ten years separated in this way has been as follows :—

Calendar Year.	Pig iron from Canadian ore.	Pig iron from Imported ore.
	Tons.	Tons.
1896	40,720	26,548
1897	26,200	31,807
1898	30,553	46,462
1899	34,244	68,699
1900	35,387	61,188
1901	83,100	191,276
1902	71,664	286,238
1903	42,052	255,833
1904	68,297	235,157
1905	68,170	457,136

During the year there were thirteen furnaces in blast for varying periods, operated by the following companies :—

Dominion Iron and Steel Company, Sydney, C.B.—Four completed furnaces of which three were operated during the year.

Nova Scotia Steel and Coal Company, New Glasgow, N.S.—One furnace at Sydney Mines, C.B.

Londonderry Iron and Mining Company, Ltd., Londonderry, N.S.—Furnace plant at Londonderry.

Canada Iron Furnace Co. Ltd., Montreal, Que.—Furnace plants at Radnor Forges, Que., and Midland, Ont.

John McDougall and Co., Montreal, Que.—Two small furnaces at Drummondville, Que.

Deseronto Iron Co., Ltd., Deseronto, Ont.—Furnace plant at Deseronto.

Hamilton Steel and Iron Co., Ltd.—Furnace near Hamilton, Ont.

The Algoma Steel Co., Ltd., (Lake Superior Corporation).—Two furnaces at Steelton, Ont., near Sault Ste. Marie.

Of fourteen completed furnaces on December 31st, 1905, nine were in blast and five were idle. The total capacity of the fourteen furnaces if in continuous operation, would be over 800,000 tons per annum.

The statistics of the production of pig iron and steel and of rolled iron and steel in Canada as well as in the United States, are admirably presented in the Annual Statistical Report of the American Iron and Steel Association, and the following information concerning the production of steel and rolled iron and steel in Canada, is taken from the above mentioned report for 1905 :—

'The production of all kinds of steel ingots and castings in Canada in 1905, was much the largest in the history of the Dominion, and exceeded by 221,412 tons that of 1902, the year of next largest production, when 182,037 tons were made. As compared with 1904, the increase amounted to 254,665 tons, or over 171 per cent. Bessemer and open hearth steel ingots and castings were made in both 1904 and 1905, the production of Bessemer steel amounting to 164,488 tons in 1905, against 42,738 tons in 1904, and open hearth steel to 238,681 tons in 1905, against 106,046 tons in 1904. Almost all the open hearth steel reported in 1904 and 1905, was made by the basic process. The Bessemer steel was all made by the acid process. A few hundred tons of steel castings were made in 1905 by minor processes. All the steel castings made in 1905 by various processes amounted to 9,394 tons against 6,505 tons in 1904. Canada does not make crucible steel ingots or castings.

The following table gives the production of all kinds of steel ingots and castings in Canada from 1894 to 1905, in gross tons.

Years.	Gross Tons.
1894	25,685
1895	17,000
1896	16,000
1897	18,400
1898	21,540
1899	22,000
1900	23,577
1901	26,084
1902	182,037
1903	181,514
1904	148,784
1905	403,449

Production of Rolled Iron and Steel in Canada.

The production of finished rolled iron and steel in Canada in 1905 was also much larger than in any previous year and amounted to 385,826 tons, as compared with 180,038 tons in 1904, the year of next largest production, an increase of 205,788 tons, or over 114 per cent.

The following tables gives the production of all kinds of finished rolled iron and steel in Canada from 1895 to 1905, in gross tons. Rolled forging blooms and forging billets are included for 1905.

Years.	Gross Tons.
1895	66,402
1896	75,043
1897	77,021
1898	90,303
1899	110,642
1900	100,690
1901	112,007
1902	161,485
1903	129,516
1904	180,038
1905	385,826

The production of Bessemer steel rails in 1905, amounted to 133,690 gross tons, as compared with 35,155 tons in 1904; open-hearth steel rails. 45,195 tons, against 1,061 tons in 1904; structural shapes 885 tons, against 447 tons in 1904; nail and spike plate 4,110 tons, against 5,030 tons in 1904; plates and sheets 4,944 tons, against 3,102 tons in 1904; all other finished rolled products, excluding muck and scrap bars, blooms, billets, sheet bars, and other unfinished forms, but including for 1905, 1,120 tons of forging blooms for billets 197,002 tons, against 135,243 tons in 1904; total 385,826 tons, against 180,038 tons in 1904. Of the 385,826 tons of finished iron and steel reported for 1905, about 318,405 tons were rolled from steel and 67,421 tons from iron, as compared with about 126,850 tons rolled from steel and about 53,188 tons rolled from iron in 1904.

In 1905 the rolling mills and steel works in Canada which operated cut nail or wire nail factories, produced 366,800 kegs of cut nails and wire nails of 100 pounds each, as compared with 324,000 kegs in 1904.

On December 31, 1905, there were 21 completed rolling mills and steel works in Canada. In addition 1 plant was being built and two plants were projected. Of the completed plants, 3 were equipped for the manufacture of steel castings only, one for the manufacture of open hearth steel ingots only, 5 for the manufacture of Bessemer or open hearth steel ingots and rolled products and 12 for the manufacture of rolled products only. The building plant was being equipped for the manufacture of black plates and tinplates and tern plates.

Of the 21 completed rolling mills and steel works in Canada on December 31, 1905, 4 were located in Nova Scotia, 5 in Quebec, 10 in Ontario, 1 in New Brunswick and 1 in Manitoba. The building plant and the two projected plants, are also in Ontario.

Bounties.—Bounties on iron and steel, made in Canada, were provided for by the Dominion government in 1897 (chapter 6, Statutes of Canada, 1897). This Act was amended in 1899 (chapter 8, Statutes of Canada, 1899), and again in 1903 (chapter 68, Statutes of Canada 1903).

The Act of 1903 also provides for the gradual extinguishment of the bounties authorized in 1897 as follows :—

Period.	On steel ingots, puddled iron bars, and pig iron from Canadian ore.	On pig iron from foreign ore.
	Per ton.	Per ton.
From July 1, 1903 to June 30, 1904.....	$ 2 70	$ 1 80
" 1904 to June 30, 1905.....	2 25	1 50
" 1905 to June 30, 1906.....	1 65	1 10
" 1906 to June 30, 1907	1 05	0 70

The payments by the Dominion government on account of iron and steel bounties during the fiscal year ending June 30, 1905, were as follows, the figures having been compiled from the Auditor General's Repors for 1905.

Bounties Paid on Pig Iron Manufactured in Canada, Fiscal Year, 1904-5.

Company.	On Pig Iron from Canadian Ore.		On Pig Iron from Imported Ore.		Total Bounties.
	Tons.	Bounties.	Tons.	Bounties.	
		$ cts.		$ cts.	$ cts.
Algoma Steel Co., Ltd....	165·66	372 80	70,434·95	105,652 36	106,025 16
Canada Iron Furnace Co., Ltd.					
Midland, Ont.....	1,506·29	3,389 15	34,666·18	51,999 27	55,388 42
Radnor Forges, Que.....	5,145·96	11,578 44	2,236·25	3,354 41	14,932 85
Deseronto Iron Co., Ltd ...	571·00	1,284 75	10,371·00	15,556 50	16,841 25
Dominion Iron and Steel Co., Ltd.....	216·45	487 01	131,878·81	197,818 22	198,305 23
Electric Reduction Co., Buckingham, Que.....	176·51	397 15	.....	.....	397 15
Hamilton Steel and Iron Co., Ltd	29,319·31	65,968 43	32,627·07	48,940 60	114,909 03
John McDougall & Co.....	2,485·53	5,592 44	.... ..	.....	5,592 44
Londonderry Iron & Mining Co., Ltd	19,864·77	44,695 72	....	.....	44,695 72
Nova Scotia Steel and Coal Co., Ltd	. .. .		45,053·15	67,579 73	67,579 73
	59,451·48	133,765 89	327,267·41	490,901 09	624,666 98

SESSIONAL PAPER No. 26a

BOUNTY ON STEEL INGOTS AND PUDDLED IRON BARS, FISCAL YEAR, 1904-5.

Company.	Tons.	Bounty.
		$ cts.
Algoma Steel Company, steel ingots	132,858·34	298,931 25
Dominion Iron and Steel Company, steel ingots	113,893·32	256,259 98
" " " steel ingots made during year 1903-4	825·71	2,229 42
Hamilton Steel and Iron Co., Ltd., steel ingots	26,981·90	60,709 26
" " " puddled iron bars	3,508·81	7,894 83
Nova Scotia Steel and Coal Co., Ltd., steel ingots	25,861·56	58,188 52
	303,929·64	684,213 26

BOUNTIES PAID ON ARTICLES MANUFACTURED FROM STEEL, FISCAL YEAR, 1904-5.

Company.	Tons.	Bounty.
		$ cts.
Dominion Iron and Steel Co., Ltd., Sydney, C.B.—		
Rolled round steel wire rods at $6	36,680·93	220,085 62
Hamilton Iron and Steel Co., Ltd.—		
Rolled angle bars at $3	1,493·48	4,480 44
Montreal Rolling Mills Co.—		
Rolled round wire rods at $6	213·35	1,280 10
Nova Scotia Steel and Coal Co., Ltd.—		
Rolled angles at $3	1,740·92	5,222 77
Rolled plates, at $3	84·77	254 31
		231,323 24

The total amount of bounties on iron and steel, paid by the Dominion Government during the fiscal year, ending June 30th, 1905, was therefore as follows :

Bounties on pig iron	$ 624,666 98
" " on steel ingots and puddled iron bars	684,213 26
" " on articles manufactured from steel	231,323 24
	1,540,203 48

Total bounties paid to each company—Fiscal year ending June 30th, 1905.

Algoma Steel Co., Ltd	$ 404,956 41
Canada Iron Furnace Co., Ltd	70,321 27
Deseronto Iron Co., Ltd	16,841 25
Dominion Iron and Steel Co., Ltd	676,880 25
Electric Reduction Co., Ltd	397 15
Hamilton Steel & Iron Co., Ltd	187,993 56
John McDougall & Co	5,592 44
Londonderry Iron & Mining Co., Ltd	44,695 72
Montreal Rolling Mills Co	1,280 10
Nova Scotia Steel & Coal Co., Ltd	131,245 33
Total	$1,540,203 48

Table 6, illustrates the extent of the foreign trade of the country in regard to iron and steel products and machinery &c., made therefrom.

TABLE 6.

IRON.

EXPORTS OF IRON AND STEEL GOODS, THE PRODUCT OF CANADA.

Calendar Year 1905.		Quantity.	Value.
			$
Stoves	No.	986	11,637
Castings, N.E.S	$		64,970
Pig iron	Tons.	866	22,284
Machinery, N.E.S	$		393,170
Sewing machines	No.	977	21,972
Typewriters	"	4,100	138,941
Scrap iron and steel	Cwt.	482,179	240,105
Hardware	$		170,262
Steel and manufactures of	$		224,217
Total			1,287,558

The Canadian consumption of iron and steel products, is illustrated in the following tables, Nos. 7, 8, 9, 10a, 10b and 11. The first three of these deal with the cruder forms of the metal the next two, with the manufactured articles wholly or largely composed of iron and steel, while the last table summarizes all the preceeding ones. They all cover the fiscal year ending June 30, 1905.

TABLE 7.

IRON.

IMPORTS OF IRON, PIG, SCRAP, &c.

Fiscal Year.	Pig Iron.		Charcoal Pig Iron.		Old and Scrap Iron.		Wrought Scrap and Scrap Steel.	
	Tons.	Value.	Tons.	Value.	Tons.	Value.	Tons.	Value.
		$		$		$		$
1880	(a) 23,159	371,956	.....	.....	928	14,042	.....	.....
1881	(a) 43,630	715,997	.....	.....	584	8,807	.....	.....
1882	56,594	811,221	6,837	211,791	1,327	20,406	....	.
1883	75,295	1,085,755	2,198	58,994	709	7,776	. .	.... .
1884	49,291	653,708	2,893	66,602	3,136	44,223	.	.. . .
1885	42,279	545,426	1,119	27,333	3,552	46,275	.	. .
1886	42,463	528,483	3,185	60,086	10,151	158,100	.....	.. ...
1887	46,295	554,388	3,919	77,420	17,612	220,167	(b) 79	1,086

	Pig Iron, &c. (c)	
	Tons.	Value.
		$
1888	48,973	648,012
1889	72,115	864,752
1890	87,613	1,148,078
1891	81,317	1,085,929
1892	68,918	886,485

	Pig Iron.		Charcoal Pig Iron.		Cast Scrap Iron.			
	Tons.	Value.	Tons.	Value.	Tons.	Value.		
		$		$		$		
1893	56,849	682,209	5,944	84,358	729	9,317	45,459	574,809
1894	42,376	483,787	2,906	34,968	78	771	30,850	369,682
1895	31,637	341,259	2,780	31,171	643	4,347	23,390	244,388
1896	36,131	394,591	917	11,726	93	741	13,607	157,996
1897	25,766	291,788	2,936	35,373	238	1,362	7,903	93,541
1898	37,186	382,103	2,250	23,583	1,559	13,251	(e)48,903	534,577
1899	44,261	452,911	1,955	19,123	2,378	22,594	(e)28,352	301,268
1900	49,767	811,490	1,816	38,736	13,747	150,681	(e)38,753	638,505
1901	35,293	548,033	490	7,121	4,499	51,032	(e)24,773	242,189
1902	39,978	585,077	38	726	3,048	38,958	(e)36,150	520,909
1903	91,730	1,338,574	(f) 882	16,352	7,137	94,028	(e)43,115	670,402
1904	62,515	894,728	.....	.....	11,385	49,923	(e)21,027	298,806
1905	(d) 71,005	857,879	.....	.....	(f) 6,533	75,521	(e)15,479	210,900

(a) Comprises pig-iron of all kinds.
(b) From May 13 only.
(c) These figures appear in Customs reports under heading 'Iron in pigs, Iron kentledge and cast scrap-iron.'
(d) Duty $2.50 per ton.
(e) Scrap iron and scrap steel, old, and fit only to be remanufactured, being part of, or recovered from, any vessel wrecked in waters subject to the jurisdiction of Canada. Duty free.

Iron or steel scrap, wrought, being waste or refuse, including punchings, cuttings and clippings of iron or steel plates or sheets, having been in actual use, crop ends of tin plate bars, blooms and rails, the same not having been in actual use. Duty $1 per ton.

(f) Duty $2.50 per ton.

TABLE 8.

IRON.

IMPORTS OF FERRO-MANGANESE, &C.

Fiscal Year.	Tons.	Value.
*1887	123	$ 1,435
*1888	1,883	29,812
*1889	5,868	72,108
*1890	696	18,895
*1891	2,707	40,711
*1892	1,311	23,930
*1893	529	15,858
*1894	284	9,885
†1895	164	5,408
†1896	652	12,811
†1897	426	9,233
†1898	1,418	22,516
†1899	1,160	22,539
†1900	1,149	39,064
†1901	1,512	38,954
†1902	6,513	150,977
†1903	6,350	162,710
†1904	2,975	75,554
†1905 (Duty, 5 p.c.)	12,935	246,815

*These amounts include :—Ferro-manganese, ferro-silicon, spiegel, steel bloom ends, and crop ends of steel rails, for the manufacture of iron or steel.

†Ferro-silicon, spiegeleisen and ferro-manganese.

TABLE 9.

IRON.

IMPORTS : IRON IN SLABS, BLOOMS, LOOPS AND PUDDLED BARS, &C.

Fiscal Year.	Cwt.	Value.	Fiscal Year.	Cwt.	Value.
1880	195,572	$244,601	1892	64,397	$ 56,186
1881	111,666	111,374	1893	65,269	58,533
1882	203,888	222,056	1894	50,891	45,018
1883	258,639	269,818	1895	78,639	67,321
1884	252,310	264,045	1896	128,535	110,757
1885	312,329	287,734	1897	56,560	48,954
1886	273,316	248,461	1898	162,891	122,426
1887	522,853	421,598	1899	124,311	103,198
1888	110,279	93,377	1900	255,145	362,463
1889	80,383	67,181	1901	234,925	206,975
1890	15,041	45,923	1902	401,306	419,543
1891	41,567	38,931	1903	394,418	380,034
			1904	200,295	216,571
			1905*	317,829	319,665

*Iron or steel ingots, cogged ingots, blooms, slabs, billets, puddled bars, and loops or other forms, N.O.P., less finished than iron or steel bars, but more advanced than pig-iron, except castings. Duty $2 per ton.

Table D.

IRON ORE

A	Production of Canadian Ore	Tons
B	Consumption of Canadian Ore in Canadian furnaces	"
C	Consumption of Foreign Ore in Canadian furnaces.	"

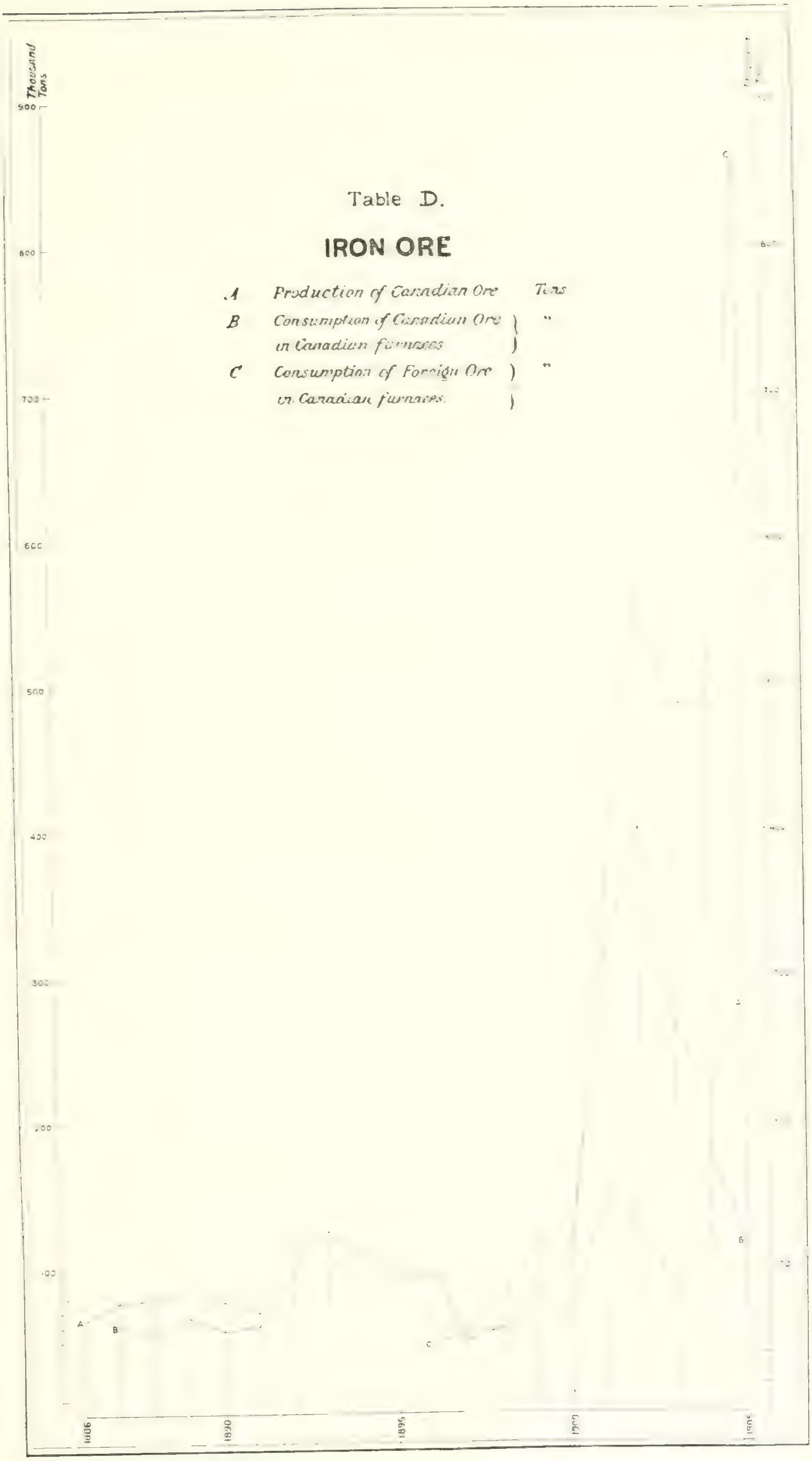


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Table D.D.

PIG IRON

PRODUCTION

A	*Pig Iron from Canadian Ores*	*Tons*
£A	*Pig Iron from Canadian Ores*	*Value*
B	*Pig Iron from Foreign Ores*	*Tons*
£B	*Pig Iron from Foreign Ores*	*Value*

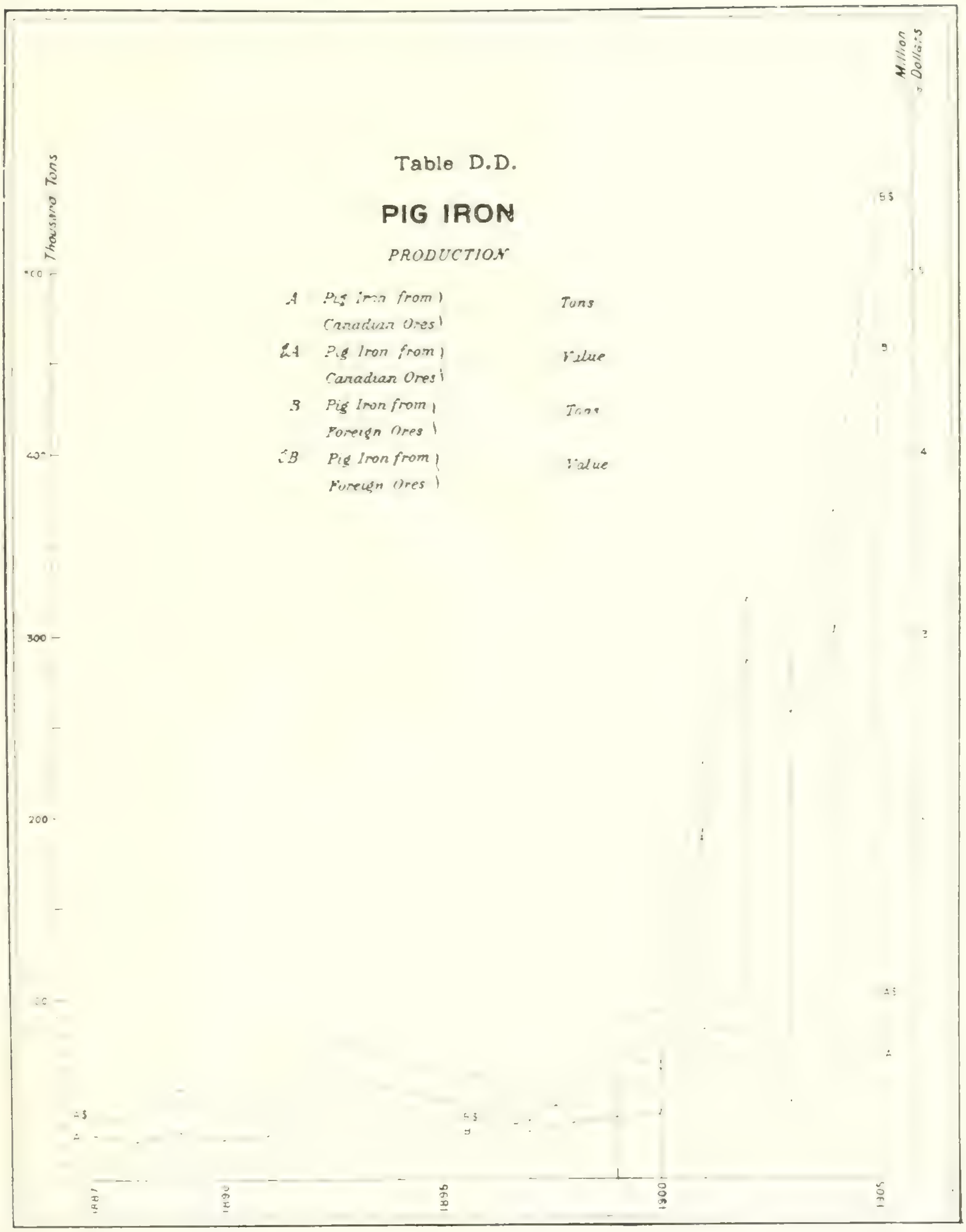


TABLE 10*a*.

IRON.

IMPORTS OF IRON AND STEEL GOODS.—1904-1905.

Fiscal Year, 1905.	Duty.		Quantity.	Value.
Bar iron or steel rolled, whether in coils, bundles, rods or bars, comprising rounds, ovals, squares and flats and rolled shapes, N.O.P.	Cwt.	$7 per ton.	587,140	$ 875,067
Castings, iron or steel, in the rough, N.E.S.	$	25 "		291,214
Canada plates, Russia iron, flat galvanized iron or steel sheets, terne plates and rolled sheets of iron or steel coated with zinc, spelter or other metal, of all widths or thicknesses, N.O.P.	Cwt.	5 "	322,187	684,586
Iron or steel bridges or parts thereof, iron or steel structural work, columns, shapes or sections drilled, punched, or in any further stage of manufacture than as rolled or cast, N.E.S	"	35 "	275,022	719,284
Malleable iron castings and iron or steel castings, N.E.S.	"	25 "	4,461	15,170
Mould boards, or shares or plough plates land sides and other plates for agricultural implements, cut to shape from rolled plates of steel but not moulded, punched, or otherwise manufactured	"	5 "	60,911	175,155
Iron or steel railway bars or rails of any form, punched or not punched, N.E.S., for railways, which term for the purposes of this item shall include all kinds of railways, street railways and tramways, even although the same are used for private purposes only, and even although they are not used or intended to be used in connection with the business of common carrying of goods or passengers	Tons.	30 "	17,904	421,084
Railway fish-plates and tie plates	"	$8 per ton.	5,396	176,002
Rolled iron or steel angles, tees, beams, channels, joists, girders, zees, stars or rolled shapes, or trough, bridge, building, or structural rolled sections, or shapes not punched, drilled or further manufactured than rolled, N.E.S., and flat eye-bar blanks not punched or drilled	Cwt.	10 %	997,880	1,380,841
Rolled iron or steel hoop, band, scroll or strip, 8 inches or less in width, No. 18 gauge and thicker, N.E.S.	"	$7 per ton.	63,922	98,889
Rolled iron or steel hoop, band, scroll or strip, thinner than No. 18 gauge, N.E.S.	"	5	39,265	81,645
Rolled iron or steel angles, tees, beams, channels, girders and other rolled shapes or sections, weighing less than 35 lbs. per lineal yard, not punched, drilled or further manufactured than rolled, N.O.P.	"	$7 per ton.	282,339	385,997
Rolled iron or steel plates or sheets, sheared or unsheared, and skelp iron or steel, sheared or rolled in grooves, N.E.S	"	$7	185,467	287,239
Rolled iron or steel plates, not less than 30 inches in width and not less than ¼ inch in thickness, N.O.P.	"	10	416,246	640,776
Carried forward				6,232,949

TABLE 10*a*—*Continued.*

IRON.

IMPORTS OF IRON AND STEEL GOODS.

Fiscal Year, 1905.		Duty.	Quantity.	Value.
				$
Brought forward				6,232,949
Rolled iron or steel sheets No. 17 gauge and thinner, N.O.P.	Cwt.	5 p. c.	300,518	641,276
Rolls of chilled iron or steel	"	30 "	5,459	17,619
Skelp iron or steel, sheared or rolled in grooves, imported by manufacturers of wrought iron or steel pipe for use only in the manufacture of wrought iron or steel pipe in their own factories	"	5 "	659,801	864,631
Swedish rolled iron and Swedish rolled steel nail rods under half an inch in diameter for the manufacture of horse-shoe nails	"	15 "	9,576	18,172
Switches, frogs, crossings and intersections for railways	"	30 "	12,488	41,833
Steel—chrome steel	"	15 "	2,770	13,543
Steel plate, universal mill or rolled edge bridge plates imported by manufacturers of bridges	"	10 "	263,836	407,380
Steel in bars, bands, hoops, scroll or strips, sheets or plates, of any size, thickness or width when of greater value than 2½c. per lb., N.O.P.	"	5 "	132,227	684,725
Iron or steel beams, sheets, plates, angles, knees and cable chains for wooden, iron, steel, or composite ships or vessels	"	Free.	60,484	102,728
Locomotive and car wheel tires of steel, in the rough	"	"	63,780	128,639
Steel for saws and straw cutters cut to shape, but not further manufactured	"	"	12,974	120,034
Crucible sheet steel, 11 to 16 gauge, 2½ to 18 inches wide, imported by manufacturers of mower and reaper knives for manufacture of such knives in their own factories	"	"	5,851	29,958
Steel of No. 20 gauge and thinner, but not thinner than No. 30 gauge, for the manufacture of corset steels, clock springs and shoe shanks imported by the manufacturers of such articles for the exclusive use in the manufacture thereof in their own factories	"	"	1,020	3,869
Steel valued at 2½ cents per lb. and upward, imported by the manufacturers of skates, for use exclusively in the manufacture thereof in their own factories	"	"	2,365	9,335
Steel, under ½-inch in diameter, or under ½ inch square, imported by the manufacturers of cutlery, or of knobs, or of locks, for use exclusively in the manufacture of such articles in their own factories	"	"	2,717	7,246
Carried forward				9,323,937

TABLE 10*a*—*Concluded.*

IRON.

IMPORTS OF IRON AND STEEL GOODS.

Fiscal Year, 1905.		Duty.	Quantity.	Value.
Brought forward				9,323,937
Steel, No. 12 gauge and thinner, but not thinner than No. 30 gauge, for the manufacture of buckle clasps, bed fasts, furniture casters and ice creepers, imported by the manufacturers of such articles, for use exclusively in the manufacture thereof in their own factories	Cwt.	Free.	2,825	7,988
Steel of No. 24 and 17 gauge, in sheets sixty-three inches long, and from 18 inches to 32 inches wide, imported by the manufacturers of tubular bow sockets for use in the manufacture of such articles in their own factories	"	"	2,110	4,432
Steel for the manufacture of bicycle chains, imported by the manufacturers of bicycle chain for use in the manufacture thereof in their own factories	"	"	526	1,720
Steel for the manufacture of files, augers auger bits, hammers, axes, hatchets, scythes, reaping hooks, hoes, hand rakes, hay or straw knives, windmills and agricultural or harvesting forks imported by the manufacturers of such or any of such articles for use exclusively in the manufacture thereof in their own factories	"	"	90,319	173,482
Steel springs for the manufacture of surgical trusses imported by the manufacturers for use exclusively in the manufacture thereof in their own factories	lbs.	"	1,710	1,114
Flat spring steel, steel billets and steel axle bars, imported by manufacturers of carriage springs and carriage axles for use exclusively in the manufacture of springs and axles for carriages or vehicles other than railway or tramway, in their own factories	cwt.	"	86,590	121,638
Spiral spring steel for spiral springs for railways, imported by the manufacturers of railway springs for use exclusively in the manufacture of railway spiral springs in their own factories	"	"	44,489	75,749
Steel for the manufacture of cutlery when imported by manufacturers of cutlery to be used in their own factories in the manufacture of such article, O.C	"	"	678	1,560
Total				9,711,620

TABLE 10*L*.

IRON.

IMPORTS OF IRON AND STEEL GOODS.

Fiscal Year, 1905.	Duty.	Quantity.	Value.
			$
Agricultural implements, N.E.S., viz:			
Cultivators and weeders	No.	20 ad val.	2,532	15,142
Drills, grain seeders,	"	20 "	3,446	121,777
Farm, road or field rollers	"	25 "	24	481
Forks, pronged	"	25 "	8,354	5,527
Harrows	"	20 "	2,603	44,874
Harvesters, self binding	"	20 "	3,594	357,550
Hay loaders	"	25 "	492	15,094
Hay tedders	"	25 "	922	35,176
Hoes	"	25 "	3,115	808
Horse rakes	"	20 "	1,890	35,161
Knives, hay or straw	"	25 "	396	269
Lawn mowers	"	35 "	4,558	17,325
Manure spreaders	"	20 "	37	2,183
Mowing machines	"	20 "	2,212	71,375
Ploughs	"	20 "	10,384	258,829
Post hole diggers	"	25 "	1,228	1,120
Potato diggers	"	25 "	154	4,719
Rakes, N.E.S	"	25 "	5,369	1,034
Reapers	"	20 "	402	18,113
Scythes	Doz.	25 "	4,288	21,377
Sickles or reaping hooks	"	25 "	648	422
Spades and shovels and spade and shovel blanks, and iron or steel cut to shape for the same	"	35 "	11,107	38,718
Parts of agricultural implements paying 20 p.c.	$	20 "		490,876
All other agricultural implements, N.E.S.	"	25 "		35,351
Anvils and vises	"	30 "		47,056
Cart or wagon skeins or boxes	Lbs.	30 "	123,246	5,558
Springs, axles, axle bars, N. E. S., and axle blanks and parts thereof of iron or steel, for railway or tramway or other vehicles	Cwt.	35 "	21,966	63,080
Butts and hinges, N.E.S.	$	30 "		60,369
Cast iron pipe of every description	Cwt.	$8 per ton	260,894	393,684
Chains, coil chains, chain links and chain shackles of iron or steel 5-16 of an inch in diameter and over	"	5 "	48,255	148,285
Chain, malleable sprocket or link belting, for binders	$	20 "		26,229
Chains, N.E.S.	"	30 "		83,155
Tacks, shoe	Lbs.	35 "	28,777	2,531
Cut tacks, brad sprigs, or shoe nails, double pointed, and other tacks of iron and steel, N.O.P	"	35 "	64,055	4,478
Engines, locomotives for railways, N.E.S.	No.	35 "	113	674,084
Fire engines	"	35 "	11	8,958
Fire extinguishing machines	"	35 "		46,805
Gasoline engines	"	25 "	929	194,074
Steam engines and boilers	"	25 "	1,107	437,432
Fittings, iron or steel, for iron and steel pipe	Lbs.	30 "	6,743,138	366,060
Carried forward				4,155,149

TABLE 10*b*—*Continued.*

IRON.

IMPORTS OF IRON AND STEEL GOODS.

Fiscal Year, 1905.	Duty.	Quantity.	Value.
			$
Brought forward			4,155,149
Forgings of iron or steel, of whatever shape or size, or in whatever stage of manufacture, N.E.S., and steel shafting, turned, compressed or polished, and hammered iron or steel bars or shapes, N.O.P. Lbs.	30 %	3,857,689	150,422
Hardware, viz:			
Builders', cabinet-makers', upholsterers', harness-makers', saddlers' and carriage hardware, including currycombs and horse boots, N.E.S. $	30 "		658,338
Horse, mule and ox shoes "	30 "		11,616
Locks of all kinds "	30 "		217,614
Machines and machinery, &c.:			
Automobiles No.	25 "	390	453,904
Fanning mills "	25 "	177	2,538
Grain crushers "	25 "	11	452
Windmills "	25 "	696	37,939
Ore crushers and rock crushers, stamp mills, cornish and belted rolls, rock drills, air compressors, cranes, derricks and percussion coal cutters $	25 "		135,076
Portable machines:			
Fodder or feed cutters No.	25 "	32	1,298
Horse powers "	25 "	44	5,656
Portable engines "	25 "	396	420,543
Portable saw mills and planing mills "	25 "	41	15,991
Threshers and separators "	25 "	568	165,908
All other portable machines "	25 "	744	37,162
Parts of portable machines $	25 "		165,771
Sewing machines and parts of No.	30 "	11,330	259,974
Slot machines "	25 "	1,583	25,224
Machines, type-writing "	25 "	3,338	187,152
All other machinery composed wholly or in part of iron or steel, N.O.P $	25 "		4,467,397
Nails and spikes, composition and sheathing nails Lbs.	15 "	17,813	2,481
Nails and spikes, wrought and pressed, trunk, clout, coopers, cigar box, Hungarian horseshoe and other nails, N.E.S. "	30 "	334,846	25,544
Nails and spikes, cut, and railway spikes "	½c. per lb	6,546,874	115,513
Nails, wire of all kinds, N.O.P "	⅗c. "	694,051	23,400
Pumps, N.E.S $	25 %		207,290
Sad or smoothing, hatters' or tailors' irons, plated wholly or in part or not "	25 "		9,022
Safes, doors for safes and vaults "	30 "		99,077
Screws, iron and steel, commonly called 'woodscrews,' N.E.S. Lbs.	35 "	157,196	26,877
Scales, balances, weighing beams and strength testing machines $	30 "		94,255
Skates of all kinds and parts thereof Pairs	35 "	103,430	49,579
Stoves of all kinds and parts thereof, N.E.S. $	25 "		416,672
Sheets, flat of galvanized iron or steel Cwt.	5 "	322,523	925,900
Carried forward			13,564,734

TABLE 10*b*—*Continued.*

IRON.

IMPORTS OF IRON AND STEEL GOODS.

Fiscal Year, 1905.	Duty.	Quantity.	Value.
			$
Brought forward			13,564,734
Sheet iron or steel corrugated, galvanized .. Cwt.	25 "	4,210	8,713
Sheet iron or steel corrugated not galvanized "	30 "	1,471	2,683
Tubing :			
Boiler tubes of wrought iron or steel, including flues and corrugated tubes for marine boilers $	5 %		108,814
Tubes of rolled steel, seamless, not joined or welded, not more than 1½ inches in diameter "	10 "		2,551
Tubes, seamless steel, for bicycles "	10 "		6,154
Tubing, wrought iron or steel, plain or galvanized, threaded and coupled or not, over 2 inches in diameter, N.E.S. "	15 "		497,727
Tubing, wrought iron or steel, plain or galvanized, threaded and coupled or not, 2 inches or less in diameter, N. E.S "	35 "		90,861
Other iron or steel tubes or pipes, N.O.P. "	30 "		145,686
Ware, galvanized sheet iron or of galvanized sheet steel, manufactures of, N.O.P. "	25 "		26,255
Ware, agate, granite or enamelled iron or steel hollow ware "	35 "		90,851
Ware, enamelled iron or steel ware, N. E.S., iron or steel hollow ware, plain black, tinned or coated, and nickel and aluminium kitchen or household hollow ware, N.E.S "	30 "		181,185
Wire bale ties Bundles of 250 ties	30 "	3,061	2,261
Wire cloth or wove wire and netting of iron or steel Lbs.	30 "	1,001,572	45,809
Wire screens, doors and windows $	30 "		11,166
Wire fencing, woven, buckthorn strip and wire fencing of iron or steel, N.E.S. Lbs.	15 "	1,276,757	41,564
Wire, single or several, covered with cotton, linen, silk, rubber or other material, &c., N.E.S "	30 "	2,509,696	354,272
Wire of all kinds, N.O.P "	20 "	8,962,380	214,599
Wire rope, stranded or twisted wire, clothes lines, picture or other twisted wire and wire cables, N.E.S. "	25 "	2,002,691	148,236
Iron or steel nuts, washers, rivets and bolts with or without threads and nut bolt and hinge blanks, and T. and strap hinges of all kinds, N.E.S "	¾ c.p. lb. and 25 %	3,560,665	124,545
Pen-knives, jack-knives and pocket knives of all kinds $	30 %		174,560
Table cutlery, all kinds, N.O.P "	30 "		268,482
All other cutlery, N.E.S "	30 "		240,261
Guns, rifles, including air guns and air rifles, (not being toys) muskets, cannons, pistols, revolvers, or other firearms "	30 "		457,706
Carried forward			17,109,675

TABLE 10*b*—*Continued*

IRON.

IMPORTS OF IRON AND STEEL GOODS.

Fiscal Year, 1905.	Duty.	Quantity.	Value.
			$
Brought forward			17,109,675
Bayonets, swords, fencing foils and masks	30 "		3,234
Needles of any material or kind, not otherwise provided	30 "		86,314
Tools and implements :			
Adzes, cleavers, hatchets, wedges, sledges, hammers, crow bars, cant dogs and track tools, picks, mattocks and eyes or poles for the same $	30 %		62,218
Axes Doz.	25 "	4,469	24,717
Saws $	30 "		176,943
Files and rasps, N.E.S. "	30 "		78,012
Tools, hand or machine, of all kinds, N.O.P "	30 "		859,908
Knife blades, or blanks, and forks of iron or steel, in the rough not handled, filed, ground or otherwise manufactured "	10 "		67
Manufactures : articles or wares not specially enumerated or provided for, composed wholly or in part of iron or steel, and whether partly or wholly manufactured. "	30 "		2,524,182
Anchors Cwt.	Free	3,605	13,736
Iron or steel, rolled round wire rods, in the coil not over $\frac{3}{8}$-inch in diameter, imported by wire manufacturers for use in making wire in the coil in their own factories "	"	634,597	792,078
Iron or steel masts, or parts of "	"	18	60
Rolled iron tubes not welded, or joined, under $1\frac{1}{2}$ inch in diameter, angle iron 9 and 10 gauge, not over $1\frac{1}{2}$ inch wide, iron tubing lacquered or brass covered, not over $1\frac{1}{2}$ inch diameter, all of which are to be cut to lengths for the manufacture of bedsteads, and to be used for no other purpose, and brass trimmings for bedsteads imported for the manufacture of iron or brass bedsteads "	"		163,329
Steel bowls for cream separators and cream separators $	"		674,618
Cream separators : articles for the construction or manufacture of—when imported by manufacturers of cream separators to be used in their own factories for the manufacture of cream separators, O.C. "	"		58,859
Steel rails weighing not less than 45 lbs. per lineal yard for use only in the tracks of railways which are employed in the common carrying of goods and passengers, and are operated by steam motive power only Cwt.	"	4,249,816	5,051,762
Carried forward			27,679,712

TABLE 10*b*—*Concluded.*

IRON.

IMPORTS OF IRON AND STEEL GOODS.

Fiscal Year, 1905.	Duty.	Quantity.	Value.
			$
Brought forward			27,679,712
Steel wire, Bessemer soft drawn spring of Nos. 10, 12 and 13 gauge respectively, and homo steel spring wire of Nos. 11 and 12 gauge, respectively, imported by manufacturers of wire mattresses, to be used in their own factories in the manufacture of such articles	"	Free.	4,584	11,146
Machinery and structural iron for beet root sugar factories	$	"		9,071
Flat steel wire of No. 16 gauge or thinner imported by the manufacturers of crinoline, corset wire and dress stays, for use in the manufacture of such articles in their own factories	Cwt.	"	2,936	12,159
Wire, crucible cast steel	Lbs.	"	2,113,355	94,528
Galvanized iron or steel wire Nos. 9, 12 and 13 gauge	Cwt.	"	333,845	658,123
Barbed fencing wire of iron and steel	"	"	411,579	892,367
Total				29,357,106

TABLE 11.

IRON.

IMPORTS OF PIG IRON, IRON AND STEEL GOODS, &c., FISCAL YEAR, 1904-1905.

Recapitulation of Tables, 7, 8, 9, 10*a* and 10*b*.

——	Tons.	Value.
Pig iron	71,005	$857,879
Pig iron, charcoal		
Scrap iron, cast	6,533	75,521
Scrap steel, wrought	15,479	210,900
Ferro-manganese, &c	12,935	246,815
Iron in slabs, blooms, puddled bars, &c	15,891	319,665
Iron and steel goods partially manufactured		9,711,620
Iron and steel goods more highly manufactured*		29,357,106
Total		40,779,506

*Machinery, &c., classed under iron and steel goods in Customs report.

LEAD.

The production of lead in Canada has again increased, and shows a total output in 1905 of 56,864,915 pounds as compared with 37,531,244 pounds in 1904, an increase of 19,333,671 pounds or 51 per cent.

The average monthly price of refined lead on the New York market during 1905 was 4·707 cents, which is over 9 per cent higher than the average price in 1904, and is the highest average price received for lead, recorded in the tables which date back to 1887. This high level price, together with the bounty paid on the production of lead ores, have no doubt stimulated the production of the metal, although the output is not yet as great as was attained in 1900, when 63,169,821 pounds were produced without the assistance of any bounty, and when the price of lead was lower than during the past year.

The total amount paid in bounties during the Calendar year 1905, was $334,224. The payment of bounty on lead in ore exported to Europe, ceased on June 30, 1905, and in the case of ore treated in Canada or exported to the United States, the rate of bounty was gradually diminished, owing to the rise in the price of lead (as per the terms of the bounty act), and all payments ceased in November, when the price of lead reached £16 per long ton.

Previous to 1904, lead ores mined in Canada, were either exported or were reduced in Canadian furnaces to lead bullion carrying gold, silver, etc. which product, was then exported for further treatment.

The Canadian Smelting Works at Trail, B.C. however, has had an electrolytic lead refinery in operation for two years producing pig lead, lead pipe, sheet lead, &c., of exceptional purity. The production of refined lead by this firm has been as follows:—

Year.	Refined lead produced.
1904	7,519,440 lbs.
1905	15,804,509 "

At the close of 1905, about 50 tons per day were being treated and lead is being supplied to the corroding works recently established by the Carter White Lead Company of Canada, Ltd., at Montreal. The latter plant is equipped with machinery for an immediate capacity of

7000 tons per annum, but is designed for an ultimate capacity of 15,000 tons, and will use Trail lead exclusively.

The whole of the output of lead in 1904 was derived from mines in British Columbia, with the exception of a small amount which was mined by the Ontario Mining and Smelting Company at the Hollandia mine, Bannockburn, Hastings county, Ont., and treated at the Stanley Smelting Works at Bannockburn.

TABLE 1.

LEAD.

ANNUAL PRODUCTION.

Calendar Year.	Pounds.	Price per Pound.	Value.
		cts.	
1887	204,800	4·50	$ 9,216
1888	674,500	4·42	29,812
1889	165,100	3·93	6,488
1890	105,000	4·48	4,704
1891	88,665	4·35	3,857
1892	808,420	4·09	33,064
1893	2,135,023	3·73	79,636
1894	5,703,222	3.29	187,636
1895	16,461,794	3·23	531,716
1896	24,199,977	2·98	721,159
1897	39,018,219	3.58	1,396,853
1898	31,915,319	3·78	1,206,399
1899	21,862,436	4·47	977,250
1900	63,169,821	4·37	2,760,521
1901	51,900,958	4·334	2,249,387
1902	22,956,381	4·069	934,095
1903	18,139,283	4·237	768,562
1904	37,531,244	4·309	1,617,221
1905	56,864,915	4·707	2,676,632

Exports of lead in ore, according to Customs returns were 7,284 tons to the United States and 20,175 to other countries, or a total export of lead of 20,852 tons, equivalent to a little over 78 per cent. of the total output.

Statistics of exports and imports are given in the following tables:

TABLE 2.

LEAD.

EXPORTS

Calendar Year.	Value.
1873	$1,993
1874	127
1875	7,510
1876	66
1877	720
1878	
1879	230
1880	
1881	
1882	32
1883	5
1884	36
1885	
1886	
1887	724
1888	18
1889	
1890	
1891	5,000
1892	2,509
1893	3,099
1894	144,509
1895	435,071
1896	462,095
1897	925,144
1898	885,485
1899	466,950
1900	1,917,690
1901	1,804,687
1902	457,170
1903	426,466
1904	559,461
1905	1,046,541

TABLE 3.

LEAD.

IMPORTS OF LEAD.

Fiscal Year.	OLD, SCRAP AND PIG.		BARS, BLOCKS, SHEETS.		TOTAL.	
	Cwt.	Value.	Cwt.	Value.	Cwt.	Value.
1880					30,298	$124,117
1881	16,236	$ 56,919	18,222	$70,744	34,458	127,663
1882	36,655	120,870	10,540	35,728	47,195	156,598
1883	48,780	148,759	8,591	28,785	57,371	177,544
1884	39,409	103,413	9,704	28,458	49,113	131,871
1885	36,106	87,038	9,362	24,396	45,468	111,434
1886	39,945	110,947	9,793	28,948	49,738	139,895
1887	61,160	173,477	14,153	41,746	75,313	215,223
1888	68,678	196,845	14,957	45,900	83,635	242,745
1889	74,223	213,132	14,173	43,482	88,396	256,614
1890	101,197	283,096	19,083	59,484	120,280	342,580
1891	86,382	243,033	15,646	48,220	102,028	291,253
1892	97,375	254,384	11,299	32,368	108,674	286,752
1893	94,485	215,521	12,403	32,286	106,888	247,807
1894	70,223	149,440	8,486	20,451	78,709	169,891
1895	67,261	139,290	6,739	16,315	74,000	155,605
1896	72,433	173,162	8,575	23,169	81,008	196,331
1897	65,279	158,381	10,516	29,175	75,795	187,556

	OLD, SCRAP, PIG AND BLOCK.*		BARS AND SHEETS.†		TOTAL.	
1898	88,420	$260,779	22,214	$39,041	110,634	$299,820
1899	114,659	283,432	44,796	39,833	159,455	323,265
1900	62,361	207,819	15,493	53,506	77,854	251,325
1901	(a)85,321	97,011	16,295	78,316	101,616	175,327
1902	(a)122,279	104,672	18,596	49,261	140,875	153,933
1903	(a)98,530	67,821	11,535	35,398	110,065	103,219
1904	(a)94,602	121,165	14,102	39,644	108,704	160,809
1905	(a)57,074	133,775	17,792	51,972	74,866	185,747

*, Duty 15 p. c.

† Duty 25 p. c.

(a) Includes Canadian lead ore sent to the United States for refining, imported at price of refining only.

TABLE 4.

LEAD.

IMPORTS OF LEAD MANUFACTURES.

Fiscal Year.	Value.	Fiscal Year.	Value.
1880	$15,400	1893	$ 33,783
1881	22,629	1894	29,361
1882	17,282	1895	38,015
1883	25,556	1896	50,722
1884	31,361	1897	60,735
1885	36,340	1898	63,179
1886	33,078	1899	91,497
1887	19,140	1900	104,736
1888	18,816	1901	107,260
1889	16,315	1902	120,020
1890	25,600	1903	134,151
1891	23,893	1904	129,093
1892	22,636		

		Duty.	Cwt.	
1905	Lead Tea	Free.	17,648	$ 71,369
	" Pipe	35 p. c.	1,649	7,273
	" Shot and bullets	35 "	1,241	4,512
	" Manufactures, N.E.S	30 "		64,023
	Total			$147,177

TABLE 5.

LEAD.

IMPORTS OF LITHARGE.

Fiscal Year.	Cwt.	Value.	Fiscal Year.	Cwt.	Value.
1880	3,041	$14,334	1893	7,685	$24,401
1881	6,126	22,129	1894	38,547	28,685
1882	4,900	16,651	1895	11,955	32,953
1883	1,532	6,173	1896	10,710	32,817
1884	5,235	18,132	1897	12,028	34,538
1885	4,990	16,156	1898	11,446	32,904
1886	4,928	16,003	1899	9,530	32,518
1887	6,397	21,865	1900	9,139	29,176
1888	7,010	23,808	1901	11,132	51,944
1889	8,089	31,082	1902	13,002	47,021
1890	9,453	31,401	1903	13,921	47,761
1891	7,979	27,613	1904	9,894	32,633
1892	16,384	34,343	1905 ...Duty free	17,865	57,736

In July, 1905, the duty on dry white lead was increased from 5 per cent to 30 per cent, and on white lead ground in oil to 35 per cent. while the duty on red lead, orange mineral and zinc white remained at 5 per cent.

Statistics of the imports of white lead, etc., are given in table 6 following.

TABLE 6.

LEAD.

IMPORTS OF DRY WHITE AND RED LEAD AND ORANGE MINERAL.

	Fiscal Year.	Pounds.	Value.
			$
a	1885	5,404,753	198,913
a	1886	6,703,077	213,258
a	1887	6,998,820	233,725
a	1888	6,361,334	216,654
a	1889	7,066,465	267,236
b	1890	10,859,672	381,959
b	1891	8,560,615	337,407
b	1892	10,288,766	351,686
b	1893	10,865,183	364,680
b	1894	10,958,170	353,053
b	1895	8,780,052	282,353
b	1896	11,711,496	367,569
b	1897	10,310,463	347,539
b	1898	12,682,808	448,659
b	1899	14,507,945	514,842
b	1900	14,679,920	634,492
b	1901	10,241,601	461,368
b	1902	15,584,164	603,582
b	1903	19,208,786	758,371
b	1904	16,925,585	662,098
c	1905 ....Duty, 5 p.c.	17,376,588	638,381

(*a*) Imports of dry white and red lead and orange mineral.
(*b*) Imports of dry white and red lead, orange mineral and zinc white.
(*c*) Imports of dry white and red lead.

Statistics of lead production in British Columbia, comprising the greater part of the output in Canada are given separately in table 7, while the details by districts for the past four years are given in table 8. The increase in output over the previous year is over 54 per cent

and with the exception of the production attained in 1900, the output is the largest ever mined in British Columbia. The Slocan has fallen away behind in relative importance as a lead producing district, over 86 per cent of the output having been obtained in Fort Steele division and less than 10 per cent in the Slocan.

TABLE 7.

LEAD.

BRITISH COLUMBIA: PRODUCTION.

Calendar Year.	Pounds.	Price per Pound.	Value.
		cts.	
1887	204,800	4·50	$ 9,216
1888	674,500	4·42	29,813
1889	165,100	3·93	6,488
1890	Nil.		
1891	"		
1892	808,420	4·09	33,064
1893	2,131,092	3·73	79,490
1894	5,703,222	3·29	187,636
1895	16,461,794	3·23	531,716
1896	24,199,977	2·98	721,159
1897	38,841,135	3·58	1,390,513
1898	31,693,559	3·78	1,198,017
1899	21,862,436	4·47	977,250
1900	63,158,621	4·37	2,760,031
1901	51,582,906	4·334	2,235,603
1902	22,536,381	4·069	917,005
1903	18,089,283	4·237	766,443
1904	36,646,244	4·309	1,579,086
1905	56,580,703	4·707	2,663,254

TABLE 8.

LEAD.

BRITISH COLUMBIA: PRODUCTION BY DISTRICTS.

	1902.	1903.	1904.	1905.
	Pounds.	Pounds.	Pounds.	Pounds.
Cassiar				5,500
East Kootenay—				
Fort Steele	3,017,756	717,479	21,071,236	48,248,828
Other districts	204,652	951,296	401,022	149,584
West Kootenay—				
Ainsworth	3,083,039	4,299,727	3,091,648	1,002,114
Nelson	1,680,948	1,072,542	976,570	1,368,388
Slocan	13,651,144	9,880,469	10,611,227	5,399,330
Other districts	885,734	1,144,239	485,520	339,883
Yale	13,108	23,531	9,021	67,076
	22,536,381	18,089,283	36,646,244	56,580,703

The Provincial Mineralogist remarks—"In the Fort Steele Mining division of East Kootenay the St. Eugene mine has this year more than doubled its output of the previous year, espite the fact that several months were lost at the most important opening through the head works being completely destroyed by fire. The property is a large low grade concentrating proposition, galena, low in silver in a siliceous gangue. This years output was nearly 150,000 tons of ore, producing about 900,000 ounces of silver and 36,500,000 lbs. of lead, the largest lead production of any property in British Columbia, and about 65 per cent of the total production of the Province. The North Star, which has been for many years one of the largest and steadiest producers of silver-lead ore, has been worked out and practically abandoned, as development on an extensive scale, failed to disclose further ore bodies, and the small shipments made this year are only the results of the clearing out of the workings.

"With the passing of the North Star, an adjacent property, the Sullivan, has taken its place, and is today the second largest lead producer in the Province, producing nearly 11,500,000 lbs of lead or 20 per cent of the production of the Province."

Table E.

LEAD

PRODUCTION

A. Canada—Total *Pounds*

AS. Ditto *Value*

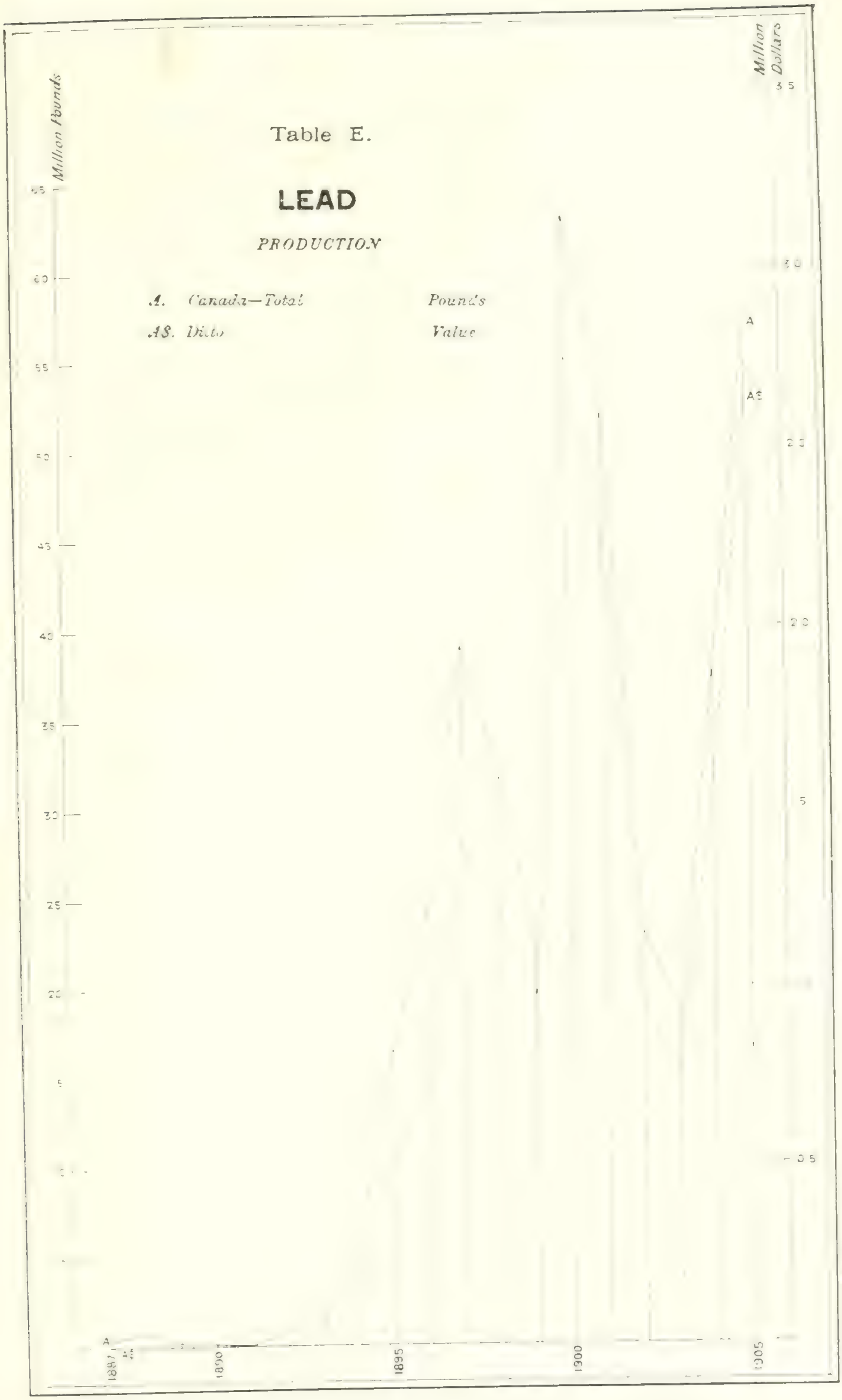


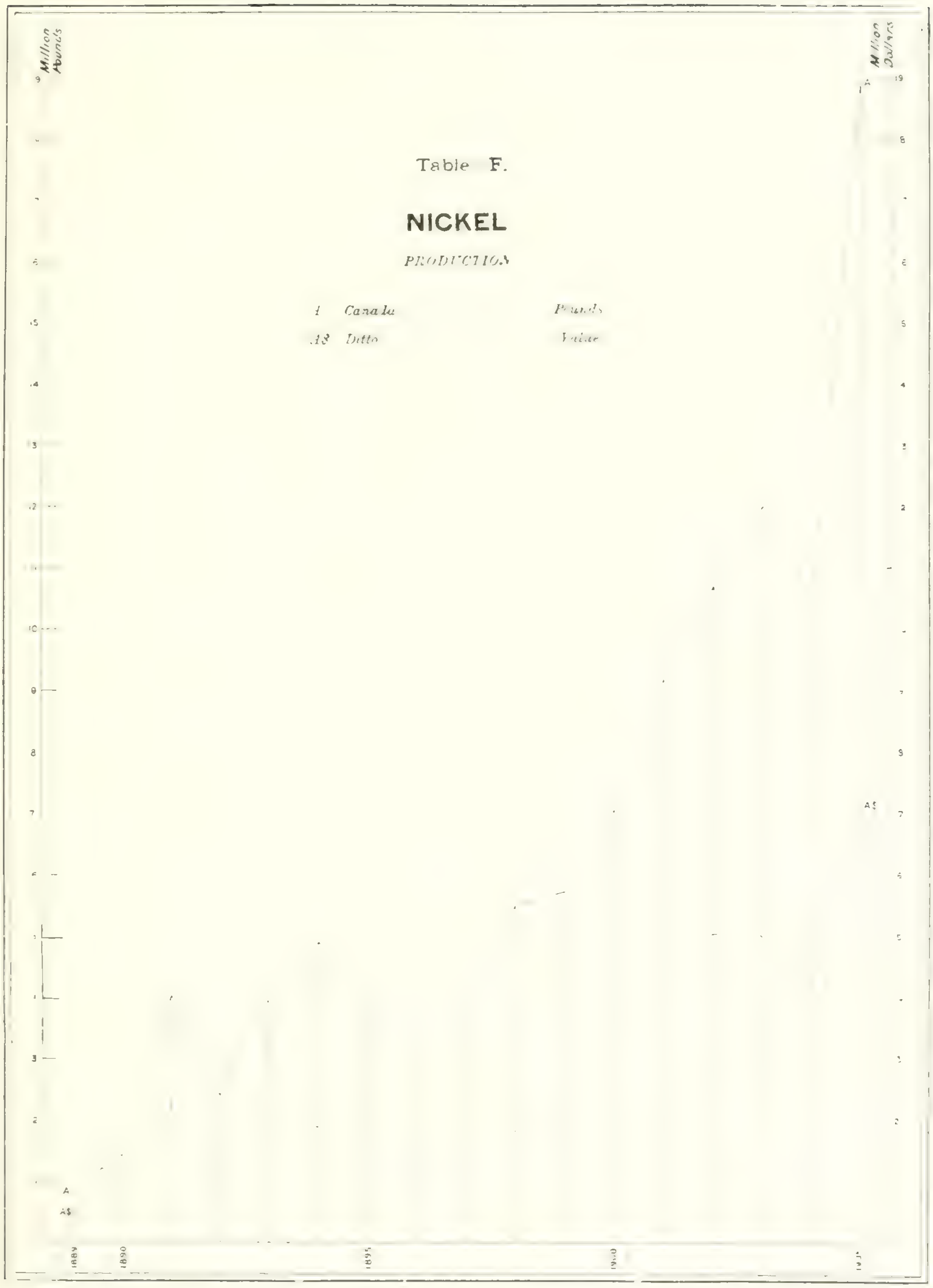
Table F.

NICKEL

PRODUCTION

1 Canada — *Pounds*

13 Ditto — *Value*



NICKEL.

The production of nickel (contents of matte shipped) from the copper-nickel ores of the Sudbury district of Ontario, reached a total of 18,876,315 lbs. in 1905, the largest output ever reached in the district, being over twice the production of 1901 and an increase of 8,328,432 lbs. or nearly 79 per cent. over 1904.

The value of the output in 1905 at the average price of refined nickel in New York, 40 cents per pound, was $7,550,526. The companies employed in mining nickel ores were as follows :—

The Canadian Copper Company (The International Nickel Co.) Copper Cliff, Ont. and New York.

The Mond Nickel Company, Victoria Mines, Ont. and London, England.

The Lake Superior Power Company (The Lake Superior Corporation) Sault Ste. Marie, Ont.

The first two only were operating smelting plants during the year. Details of the production of ore, matte, etc., in 1905 were as follows :

	Tons of 2,000 lbs.
Ore mined	277,766 tons.
Ore smelted	251,421 "
Matte produced	17,388 "
Matte shipped	17,405 "
Matte in stock at end of year	2,675 "
Copper contents of matte shipped	4,386 "
Nickel	9,438 "
Value of matte shipped	$4,019,814.

According to Customs returns, exports of nickel in matte, etc., were for the twelve months ending Dec. 31, as follows :

To Great Britain	1,281,594 lbs.
To United States	16,036,465 "
Total	17,318,059 "

The price of refined nickel remained fairly steady throughout the year ; according to the 'Engineering and Mining Journal' of New York, quotations for large lots, New York or other parallel delivery, were 40 to 47 cents per pound, according to size and condition of order. For small quantities prices ranged from 48 to 60 cents, also according to size for order and delivery.

Some of the ores from the now famous Cobalt district contain from 4 to 7 per cent. of nickel in addition to the cobalt, silver and arsenic, but no statistics of production of nickel from this district have been available for inclusion in the table of production.

TABLE 1.

NICKEL.

ANNUAL PRODUCTION.

Calendar Year.	Pounds of Nickel in Matte.	Final Average Market Price per lb. at New York.	Value.
1889	*830,477	60c.	$ 498,286
1890	1,435,742	65c.	933,232
1891	4,035,347	60c.	2,421,208
1892	2,413,717	58c.	1,399,956
1893	3,982,982	52c.	2,071,151
1894	4,907,430	38⅛c.	1,870,958
1895	3,888,525	35c.	1,360,984
1896	3,397,113	35c.	1,188,990
1897	3,997,647	35c.	1,399,176
1898	5,517,690	33c.	1,820,838
1899	5,744,000	36c.	2,067,840
1900	7,080,227	47c.	3,327,707
1901	9,189,047	50c.	4,594,523
1902	10,693,410	47c.	5,025,903
1903	12,505,510	40c.	5,002,204
1904	10.547,883	40c.	4,219,153
1905	18,876,315	40c.	7,550,526

*Calculated from shipments made by rail.

TABLE 2.

NICKEL.

EXPORTS.*

Calendar Year.	Value.	Calendar Year.	Value.
1890	$ 89,568	1898	$1,019,363
1891	667,280	1899	939,915
1892	293,149	1900	1,031,030
1893	629,692	1901	751,080
1894	559,356	1902	1,007,211
1895	521,783	1903	1,116,099
1896	658,213	1904	1,091,349
1897	723,130	1905	1,569.693

*Practically all the nickel-bearing ore and matte produced in Canada is exported, the apparent discrepancy between Tables Nos. 1 and 2 being due to the different basis of valuation adopted in the two instances. Table 1 represents the total final values of the nickel produced in Canada, for the years represented. In Table 2 the worth of the product shipped is entered at its spot value to the operators, and depends upon the particular stage to which they happen to carry the process of extraction at the time, *e.g.*, whether the shipments made are raw ore, low grade matte or high grade matte, &c.

TABLE 3.

NICKEL.

IMPORTS.

Calendar Year.		Duty.	Value.
1890			$ 3,154
1891			3,889
1892			3,208
1893			2,905
1894			3,528
1895			4,267
1896			4,787
1897			4,737
1898			5,882
1899			9,449
1900			6,988
1901			12,029
1902			15,448
1903			26,177
1904			14,682
1905	Nickel anodes	10 p. c.	15,351
	Nickel*	Free.	3,725
			$ 19,076

* Classified under the general heading of minerals in the Trade and Navigation Report.

ZINC.

The zinc smelting plant being erected at Frank, Alberta, by the Canadian Metal Company, Limited, was not yet completed at the close of 1905 consequently there was not any production of spelter to report in Canada.

The total shipments of zinc ore, concentrates, etc., during the year were 9,413 tons, valued at $139,200, derived altogether from mines in British Columbia. No returns have been received of any production in Ontario.

TABLE 1.

ZINC.

ANNUAL PRODUCTION OF ZINC.

Calendar Year.	Zinc Ore Shipped		Metallic Zinc in Ore Shipped.	
	Tons.	Spot Value	Pounds.	Final Value.
1898	1,162	$ 11,000	788,000	$ 36,011
1899	865	18,165	814.000	46,805
1900	261	4,810	212,000	9,342
1901	.....	.....	.....	.....
1902	158	1,659	142,200	6,882
1903	1,000	10,500	900,000	48,660
1904	597	3,700	477,568	24,356
1905	9,413	139,200	*	*

*Figures not available.

TABLE 2.

ZINC.

IMPORTS OF ZINC IN BLOCKS, PIGS AND SHEETS.

Fiscal Year.	Cwt.	Value.	Fiscal Year.	Cwt.	Value.
1880	13,805	$67,881	1893	26,446	124,360
1881	20,920	94,015	1894	20,774	90,680
1882	15,021	76,631	1895	15,061	63,373
1883	22,765	94,799	1896	20,223	80,784
1884	18,945	77,373	1897	11,946	57,754
1885	20,954	70,598	1898	35,148	112,785
1886	23,146	85,599	1899	18,785	107,477
1887	26,142	98,557	1900	28,748	156,167
1888	16,407	65,827	1901	20,527	103,457
1889	19,782	83,935	1902	34,871	141,560
1890	18,236	92,530	1903	26,646	142,827
1891	17,984	105,023	1904	25,553	138,057
1892	21,881	$127,302	1905 Duty free	25,141	141,514

TABLE 3.

ZINC.

IMPORTS OF SPELTER.

Fiscal Year.	Cwt.	Value.	Fiscal Year.	Cwt.	Value.
1880	1,073	$ 5,310	1893	10,721	$49,822
1881	2,904	12,276	1894	8,423	35,615
1882	1,654	7,779	1895	9,249	30,245
1883	1,274	5,196	1896	10,897	40,548
1884	2,239	10,417	1897	8,342	32,826
1885	3,325	10,875	1898	2,794	13,561
1886	5,432	18,238	1899	5,450	29,687
1887	6,908	25,007	1900	5,836	29,416
1888	7,772	29,762	1901	14,621	58,283
1889	8,750	37,403	1902	18,356	80,757
1890	14,570	71,122	1903	23,159	110,817
1891	6,249	31,459	1904	33,952	164,751
1892	13,909	62,550	1905 Duty free	37,941	206,244

*Spelter in blocks and pigs.

TABLE 4.

ZINC.

IMPORTS OF ZINC, MANUFACTURES OF.

Fiscal Year.	Value.	Fiscal Year.	Value.
1880	$ 8,327	1893	$ 7,464
1881	20,178	1894	6,193
1882	15,526	1895	5,581
1883	22,599	1896	6,290
1884	11,952	1897	5,145
1885	9,459	1898	10,503
1886	7,345	1899	14,661
1887	6,561	1900	11,475
1888	7,402	1901	6,882
1889	7,233	1902	6,683
1890	6,472	1903	9,754
1891	7,178	1904	12,682
1892	7,563		

		Duty.	
1905	Zinc seamless drawn tubing	Free.	...
	" manufactures of, N.O.P.	25 %	$ 11,912
	Total		11,912

This is the first record of shipments of zinc ore from British Columbia. The shipments of zinc ore previous to 1905, shown in table 1, were derived from mines in Eastern Canada, spasmodically operated, chiefly the Calumet mines on Calumet island, Pontiac county, Quebec; the Zenith mine near Rossport Station, Canadian

Pacific Railway, Thunder Bay district, Ont., and the Richardson mine, Frontenac county, Ont.

The following notes on zinc ore mining in British Columbia have been taken from the report of the Minister of Mines for the Province for 1905 :—

"This year, for the first time, have any important sales of zinc ore to be recorded. Plants for the 'enrichment' of zinc ores have been started at Kaslo, Roseberry and Pilot bay. These plants are merely concentrators, in which ores, or ordinary zinc concentrates, are more carefully separated, with the elimination, of minerals undesirable in the smelting of zinc ores, such as iron pyrites or carbonate, galena and gangue matter.

"The resulting 'enriched' zinc concentrates, thus rendered saleable, have found a ready market, at prices varying according to the zinc contents and freedom from impurities, from about $25 a ton for 53 per cent. zinc in a pure ore, to about $10 a ton for a 40 per cent. zinc ore not so free from impurities.

"Approximately 9,413 tons of zinc ore or zinc concentrates were sold this past year, having a value at point of shipment of about $139,200.

"Almost all of this zinc ore comes from the Slocan district, but has not been all mined this past year, as the sales include zinc concentrates which have accumulated and for which only this year has a market been found.

"As yet, most of the zinc ore sold has gone to the United States, but a zinc smelting plant having this year been erected at Frank, in Alberta, just east of the British Columbia boundary, in all probability the larger part of the British Columbia output will in future be treated there.*

"A commission appointed by the Dominion Government, and including Mr. W. R. Ingalls, of New York, and Mr. Philip Argall, of Colorado, spent the season of 1905 in investigating the possibilities of zinc ore mining in British Columbia and methods of treating the ore. The report of this commission has not as yet been published.†

"Practical demonstrations of smelting zinc-lead ores by electricity were, upon two occasions, attempted at Vancouver, to witness which the Provincial Government was invited to send a representative. Mr. Carmichael, the Provincial Assayer, who was present, reports that the demonstrations did not succeed, for reasons which, he hopes, may yet be overcome.

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* This plant was completed in June, 1906, and spelter first turned out during that month. Notes by Mr. Theo. Denis on the equipment at this plant will be found at the end of this article.

† The report of this commission was issued 1906.

"Of the undeveloped properties carrying strictly zinc ores those on Pingston creek, in the Arrow lake mining division, present the greatest surface showing"

Zinc Smelter at Frank, Alberta.

The Canadian Metal Company, Ltd., a syndicate composed mainly of French capitalists, has erected at Frank, Alberta, a large zinc smelting plant where it is intended to treat all these ores which were previously sent to United States smelters. The new plant will produce spelter, and it is also the intention to make provision to save the silver contents of the zinc ores.

The Canadian Metal Company has also purchased several zinc properties in the Slocan district, and intends to start work on them immediately. They have acquired the Pilot Bay smelter, which they will transform into a concentrating and enriching plant. Moreover, they own coal lands at Frank, and they are at present developing a coal mine within a few hundred feet of the smelter.

The smelter is situated at Frank, Alberta, on the Crows nest line of the Canadian Pacific Railway, within twelve miles of the boundary between Alberta and British Columbia. This location was decided upon on account of its being a coal producing centre.

The ores treated are the British Columbia zinc ores, both crude and concentrated. The smelter is capable of treating 60 tons of ore per day, and provision has been made for an increase to a capacity of 120 tons.

The following are average analyses of the ores treated at the smelter:—

Zinc ore, Slocan district—Lead, 3 per cent; zinc, 48 per cent; iron, 7 per cent; silica, 8 per cent; lime, traces; silver, 10 oz. per ton.

Roasted ore—Lead, 3·2; zinc, 42·9 per cent; iron, 6·5 per cent; lime, 7·0; sulphur, (due to lime) 3·9.

The process adopted in the smelter is simple. The zinc ores are crushed and sampled and stored in bins. The smelting process comprises a roasting in furnaces, which converts the zinc sulphide into zinc oxide. This is mixed with the proper proportion of a reducing agent, which is here coal dust; this mixture is distilled, the metallic zinc resulting cast into plates, and the residue from the distillation saved and treated for silver contents.

The crushing and sampling plant comprises:

One Allis-Chalmers vertical crusher.

Steel crushing rolls, 26 in. x 20 in.

Automatic sampler.

Bucket elevators.

Shaking screens (Jeffrey).
Screw and belt conveyors.

The ore, after being weighed, is dumped into the vertical crusher. The crushed product is raised to the shaking screen (10 mesh) where it is separated into coarse and fine. The coarse, which goes over 10 mesh, is sent to the rolls by means of a screw conveyor, and screened again. This cycle is repeated until all the ore goes through the screen. The screened ore is conveyed to the automatic sampler, whence a bucket elevator and a chain conveyor with steel disks, distribute it into the ore bins, which have a capacity of 900 tons. These are discharged from below, into cars which convey the ore to the roasting furnaces. It is dumped into the pit of a bucket elevator, which raises it, and it is then distributed to the roasting furnaces by a screw conveyor. The roasting is done in Merton furnaces equipped with mechanical rakes and water jacketed. They consist of five chambers, or shelves, placed one above the other, and of a hearth twelve feet in diameter where the process is completed. The fuel used is producer gas. The ore moves in a directi n opposite to the flow of gas. These furnaces are entirely new as applied to the zinc industry and were constructed by the Union Iron Works of San Francisco. There are four of them, and space for increasing the number to eight.

The mixing of roasted ore and coal dust (reducing agent) is done in two pug-mills.

The ore from the roasting furnaces is first allowed to cool on a cooling floor, then dumped into the pug-mills with the right proportion of coal dust. The mixture is then raised by a bucket elevator, loaded on cars, and sent to the distillation furnaces. These are arranged into five groups of 240 retorts each, in four horizontal tiers, gas firing, with regenerator for air only. The current of gas is reversed every half hour.

The gas plant comprises 4 producers of a diameter of 9 ft. 6 in. and two of 8 ft., Taylor system, water gas, with hydraulic joints. The coal, which is obtained from the Canadian Metal Company's own mine, is stored in the gas producer building. The pottery comprises a pug-mill, crusher for fire-clay ; a Mahler hydraulic press for muffles, &c. ; stamp mill for clay. All the refractory bricks used in the smelter were made in the pottery. The clay has to be imported from St. Louis, Missouri, as no satisfactory clay has yet been found near at hand.

There are three engines in various parts of the smelter, two of 35 h.p. and one of 60 h.p.

There are also well equipped machine and carpenter shops, laboratories, offices, &c.

MISCELLANEOUS METALLIC.

ALUMIMIUM.

The Northern Aluminium Company have extensive works at Shawenegan Falls, Que.. where they manufacture aluminium from ores imported from France and Germany. They have also a well equipped wire mill where the metal is made into aluminium wire and cables which are now used extensively in transmission of electricty. No Canadian raw material is used, but it is interesting to mention the industry inasmuch that it may stimulate search and prospecting for ores of aluminium. The Northern Aluminium Company use bauxite imported from France and Germany.

ANTIMONY.

The mining of antimony ores in Canada has been exceedingly irregular, as, previous to 1905, no production has been reported since 1898. In 1905 the auriferous antimony ores at West Gore, Hants county, Nova Scotia, were actively worked, about 20 men being employed. Not only was a considerable tonnage of ore mined but a good deal of experimenting was done during the year, in order to more fully recover the gold values and concentrate the antimony to save heavy freight rates now paid.

A description of the development of the mines and of different methods of treating the ore will be found in the report of the Department of Mines of Nova Scotia for 1905 pages 69 to 108.

According to the same report, there were mined about 4,000 tons of ore divided into two classes as follows :—

430 tons said to contain 46 per cent antimony and 5.56 ounces of gold per ton.

3,570 tons, said to contain 8 per cent antimony and $10 in gold per ton.

There were shipped to english smelter companies 527 tons of mined ore containing gold valued at $24,657. (Antimony contents not stated.)

TABLE 1

MISCELLANEOUS.

METALLIC.

ANNUAL PRODUCTION OF ANTIMONY ORE.

Calendar Year.	Tons.	Value.
1886	665	$31,490
1887	584	10,860
1888	345	3,696
1889	55	1,100
1890	26½	625
1891	10	60
1892 to 1897	Nil.	Nil.
1898	1,344	20,000
1899 to 1904	Nil.	Nil.
1905	527	

TABLE 2.

MISCELLANEOU .

METALLIC.

EXPORTS OF ANTIMONY ORES.

Calendar Year.	Tons.	Value.	Calendar Year.	Tons.	Value.
1880	40	$ 1,948	1890	38	$ 1,000
1881	34	3,308	1891	3½	60
1882	323	11,673	1892 to 1897	Nil.	Nil.
1883	165	4,200	1898	1,232	15,295
1884	483	17,875	1899	6¾	190
1885	758	36,250	1900	210	3,441
1886	665	31,490	1901	10	1,643
1887	229	9,720	1902	90	13,658
1888	352½	6,894	1903	33	4,332
1889	30	695	1904	160	7,237
			1905	525	27,118

TABLE 3.

MISCELLANEOUS.

METALLIC.

IMPORTS OF ANTIMONY.

Fiscal Year.	Pounds.	Value.	Fiscal Year.	Pounds.	Value.
1880	42,247	$ 5,903	1892	180,308	17,680
1881		7,060	1893	181,823	14,771
1882	183,597	15,044	1894	139,571	12,249
1883	105,346	10,355	1895	79,707	6,131
1884	445,600	15,564	1896	163,209	9,557
1885	82,012	8,182	1897	134,661	8,031
1886	89,787	6,951	1898	156,451	12,350
1887	87,827	7,122	1899	289,066	16,851
1888	120,125	12,242	1900	186,997	20,001
1889	119,034	11,206	1901	350,737	24,714
1890	117,066	17,439	1902	504,822	39,276
1891	114,084	17,483	1903	868,146	65,434
			1904	418,943	27,112

		Duty.		
1905	Antimony, or regulus of, not ground, pulverized or otherwise manufactured.	Free.	92,785	6,664
	Antimony salts	"	93,669	6,164
	Total		186,454	12,828

COBALT.

According to returns made to the Ontario Bureau of Mines the production of cobalt in 1904 was 29 tons, valued at $36,620, derived partly from the nickeliferous ores of the Sudbury district and partly from the silver-cobalt arsenides of Coleman township. In 1905, accord-

ing to the same authority, the production of the latter district, was 120 tons, valued at $100,000.

Mercury.

There has been no production of mercury since 1897. The small production reported in 1895, 1896 and 1897, was derived from the deposits at the western end of Kamloops lake, B.C. These deposits consist of quartz veins containing pockets of cinnabar. These veins are in a zone of decomposed volcanic rock of Tertiary age.

Table 4.

Miscellaneous.

Metallic.

Production of Mercury.

Calendar Year.	Flasks (76½ lb.)	Price per flask.	Value.
1895	71	$ 33 00	$ 2,343
1896	58	33 44	1,940
1897	9	36 00	324

Table 5.

Miscellaneous.

Metallic.

Imports of Mercury.

Fiscal Year.	Pounds.	Value.
1882	2,443	$ 965
1883	7,410	2,991
1884	5,848	2,441
1885	14,490	4,781
1886	13,316	7,142
1887	18,409	10,618
1888	27,951	14,943
1889	22,931	11,844
1890	15,912	7,677
1891	29,775	20,223
1892	30,936	15,038
1893	50,711	22,998
1894	36,914	14,483
1895	63,732	25,703
1896	77,869	32,343
1897	76,058	33,534
1898	59,759	36,425
1899	103,017	51,695
1900	85,342	51,987
1901	140,610	94,564
1902	97,283	56,615
1903	164,968	91,625
1904	151,107	80,658
1905	103,330	48,412

Duty free

Platinum.

Although the occurrence of platinum in the placer gravels is so wide spread throughout British Columbia, only about $500 worth was obtained from gravels near Granite creek, Similkameen. While the Consolidated Cariboo Hydraulic Mining Company of Cariboo, and the Berry Creek Mining Company of Thiebert creek, Cassiar, each recovered small quantities in an experimental way. The manager of the latter company reports—"Experiments were made to concentrate the black sands containing minerals belonging to the platinum group. For this purpose an undercurrent and a series of tables covered with cocoa matting, canvas and burlap, were installed at the end of No. 2 sluice.

"Although it was this year largely experimental, the mechanical concentration was quite satisfactory. During the 21 days that the concentrating plant was in operation it yielded 250 pounds of concentrates, and this amount could have been greatly increased by a man in attendance with some experience in concentration.

"Assays of these concentrates, made at the British Columbia Government Assay Office, gave 60 ounces of platinum to the ton of concentrates, and assays obtained in San Francisco gave up to 15 ounces of platinum and 7 ounces of gold per ton. These results were obtained almost entirely from top gravel, and as the bottom gravels will naturally contain more of the heavier minerals the concentrates from the latter should be very much better than this year's output."

Table 6.

Miscellaneous.

Metallic.

Annual Production of Platinum.

Calendar Year.	Value.	Calendar Year.	Value.
1887	$ 5,600	1897	$ 1,600
1888	6,000	1898	1,500
1889	3,500	1899	825
1890	4,500	1900	Nil.
1891	10,000	1901	457
1892	3,500	1902	46,502
1893	1,800	1903	33,345
1894	950	1904	10,872
1895	3,800	1905	500
1896	750		

TABLE 7.

MISCELLANEOUS.

METALLIC.

IMPORTS OF PLATINUM.

Fiscal Year.	Value.	Fiscal Year.	Value.
1883	$ 113	1895	$3,937
1884	576	1896	6,185
1885	792	1897	9,031
1886	1,154	1898	9,781
1887	1,422	1899	9,671
1888	13,475	1900	57,910
1889	3,167	1901	20,263
1890	5,215	1902	19,357
1891	4,055	1903	21,251
1892	1,952	1904	28,112
1893	14,082	1905*	61,719
1894	7,151		

*Platinum wire and platinum in bars, strips, sheets or plates, platinum retorts, pans, condensers, tubing and pipe, imported by manufacturers of sulphuric acid for use in their works. Duty free.

The larger production shown for the years 1902, 1903, 1904 was obtained from the ores of the Sudbury district, Ontario, or rather it was derived from the residues accumulated during a number of previous years during the treatment of the nickel copper mattes shipped from this district.

PALLADIUM.

It has been known for a long time that palladium was present in the nickel ore of the Sudbury district, but in past years no definite information could be obtained as to whether the metals of the platinum group were saved in the treatment which the ores and mattes underwent. As far back as 1889 it was discovered that sperrylite, the arsenide of platinum, which is present in the Sudbury ores, contained traces of palladium, but the occurrence was noted as being only of mineralogical interest. Of late years, however, the sources of platinum have not been able to supply the demand and palladium is being considered as a possible substitute on account of its malleability and high melting point (Palladium 1500°C, Platinum 1750°C).

The metal palladium is now being recovered from the Sudbury ores and according to figures received by the Ontario Bureau of Mines, the production for the past three years has been as follows :

	Ounces	Value
1902	4,411	$86,014
1903	3,177	61,952
1904	952	18,564

The high figures for 1902 and 1903 are perhaps due to working over some accumulation of old residue from matte treated in previous years.

Tin.

No deposits of tin of an economic nature, have yet been discovered in Canada, although reports that tin ores have been discovered in large quantities in this country are very frequent. We give in the table below, figures relating to the Canadian tin trade.

TABLE 8.

MISCELLANEOUS.

METALLIC.

IMPORTS OF TIN AND TINWARE.

Fiscal Year.	Value.	Fiscal Year.	Value.
1880	$ 281,880	1893	$1,242,994
1881	413,924	1894	1,310,389
1882	790,285	1895	973,397
1883	1,274,150	1896	1,237,684
1884	1,018,493	1897	1,274,108
1885	1,060,883	1898	1,550,851
1886	1,117,368	1899	1,372,813
1887	1,187,312	1900	2,418,455
1888	1,164,273	1901	2,339,109
1889	1,243,794	1902	2,293,958
1890	1,289,756	1903	2,712,186
1891	1,206,918	1904	2,389,557
1892	1,594,205		

		Duty.	
1905	Tin crystals	Free.	$ 2,064
	Tin in blocks, pigs and bars	"	819,038
	Tin plates and sheets	"	1,751,507
	Tin foil	"	62,813
	Tinware, plain, japanned, or lithographed and all manufactures of tin, N.E.S.	25	156,335
	Total		$2,791,757

NON METALLIC.

ABRASIVE MATERIALS.

Included under this heading, there are produced in Canada, corundum, the various sandstone abrasives, such as grindstones, pulpstones, whetstones, etc., and tripolite or infusorial earth.

Corundum.—The total shipments of grain corundum in 1905 from mills in Canada, was 1,644 tons, valued at $149,153 f.o.b. at railway shipping points. Compared with the shipments in 1904 there is an increase of 651 tons or over 65 per cent.

Detailed statistics of output and sales for 1905 were as follows:

Rock treated	23,570 tons
Grain corundum graded	3,361,838 pounds
Shipments—	
Grain corundum sold in Canada	280,050 pounds
Grain corundum sold in other countries	3,008,217 "
Total sales	3,288,717 pounds

Two companies were mining corundum rock and operating mills during the year. The Canada Corundum Company, Ltd., Toronto, the largest operator, worked the Craig mine at Craigmont, Renfrew county, but the mill was shut down a good part of the year, while making changes. There were 190 men employed during the year. The Ashland Emery and Corundum Company have taken over the mills and chattels of the Ontario Corundum Company. The property is located at Burgess Mines, P. O., Hastings county, Ont., and 20 men were employed for about half the year. The Corundum Refineries Ltd., were opening up a property at Jewelville, Ont., but were not in a position to produce during the year.

Statistics of shipments since 1900, are as follows :—

		Quantity.	Value.
1900	grain corundum	3 tons.	$ 300
1901	"	387 "	46,415
1902	"	768 "	84,465
1903	" 703)	970 "	80,180
	corundum ore 267)		
1904	grain corundum	993 "	109,545
1905	"	1644 "	149,153

Statistics since 1900 showing the quantities of ore treated, the corundum produced, and the sales or shipments, are given in the following tables.

TABLE No. 1.

ABRASIVE MATERIALS.

PRODUCTION OF CORUNDUM ORE AND CORUNDUM.

Calendar Year.	Corundum bearing rock treated.	Grain Corundum Graded	Grain Corundum Sold in Canada.	Grain Corundum Exported.	Total of Sales of Grain Corundum.
	Tons.	Tons.	Tons.	Tons.	Tons.
1900		60			3
1901	4,134	434	85	302	387
1902	7,996	805	106	662	768
1903	(a) 8,877	839	85	618	703
1904	28.187	1,654	116	877	993
1905	23,570	1,680	140	1,504	1,644

(a) In addition to this amount which was milled in Canada, 267 tons of ore were mined and shipped to the United States for treatment there.

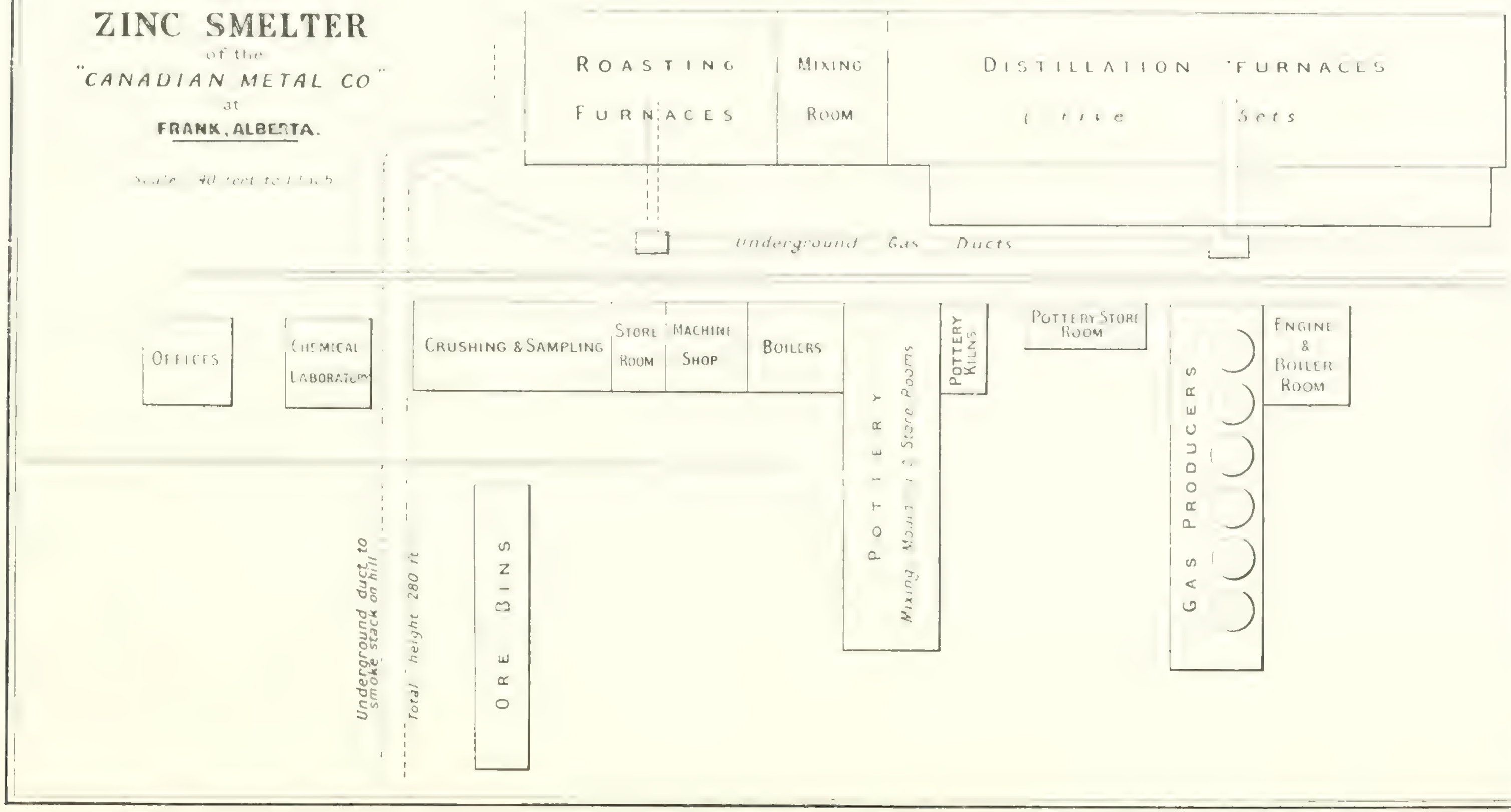
Grindstones, Pulpstones, etc.—The production of grindstones, including wood-pulp stones, etc., in 1905, from quarries in Nova Scotia and New Bruuswick, reached a total of 5,540 tons, valued $62,375, showing an increase over the production in 1904 of 891 tons or over 19 per cent., and although it is the largest production reached since 1888, there has been comparatively little variation in the yearly output for the past 20 years.

These abrasives are quarried from the Millstone Grit of the Carboniferous formation which occupies a large portion of the surface of the eastern half of the province of New Brunswick and the northern and north western parts of Nova Scotia.

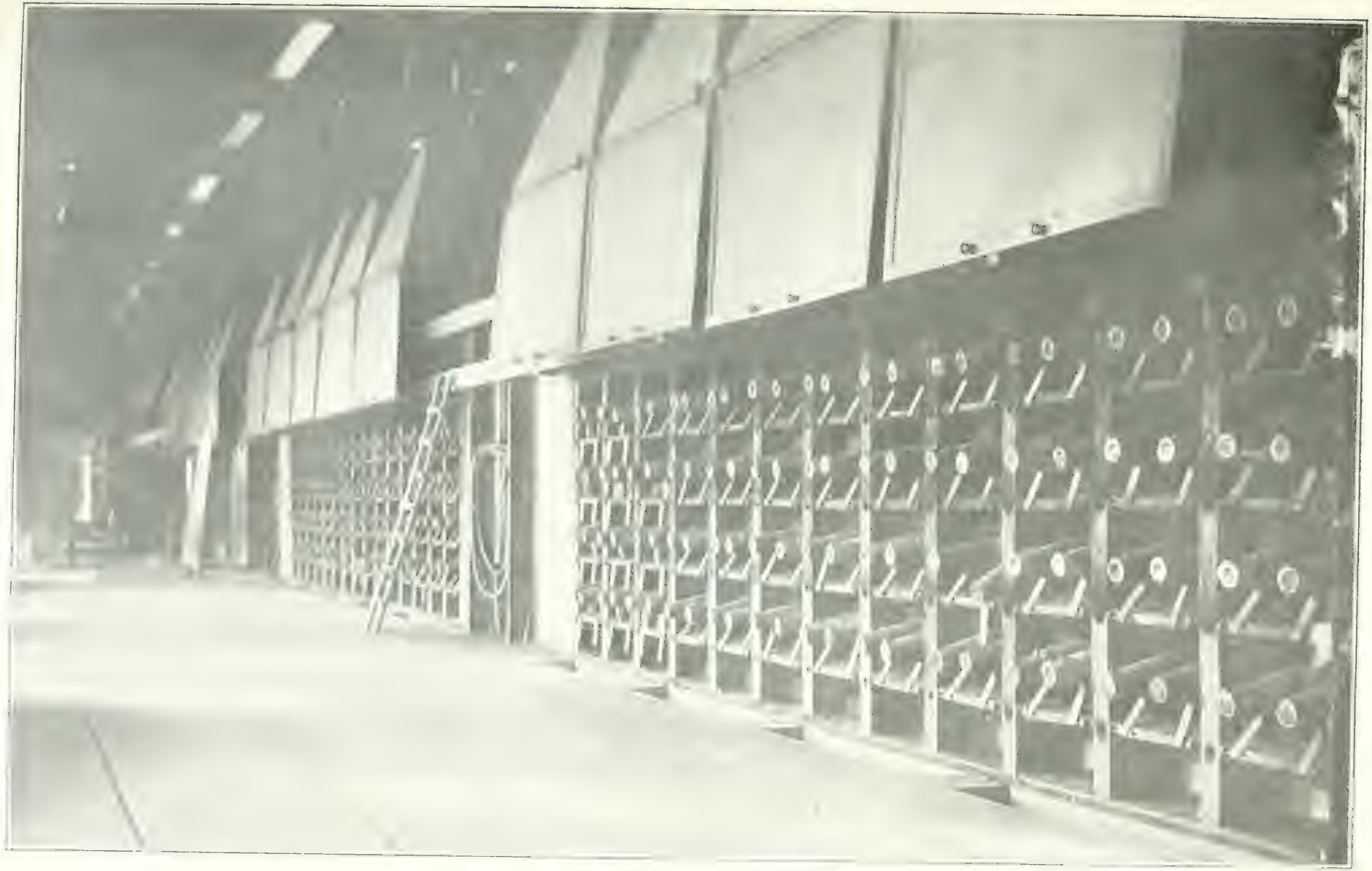
The grindstones are all shipped in a finished condition and are worth from $10 to $12 per ton. Pulp stones are sold at about $75 per stone, the weight of the stones being about $2\frac{3}{4}$ tons. The production of them in 1905 was about 25 stones, which found a market in Canadian and United States pulp mills. Scythe or whetstones are manufactured by one firm. These are put up in one quarter gross boxes, thirty pounds to the box, and are worth about $50 per ton. About 200 gross were made in 1905. At some of the quarries there is a considerable production of foundation and building stone, besides rough stones for breakwater and harbour works.

Plan
of
ZINC SMELTER
of the
"CANADIAN METAL CO"
at
FRANK, ALBERTA.

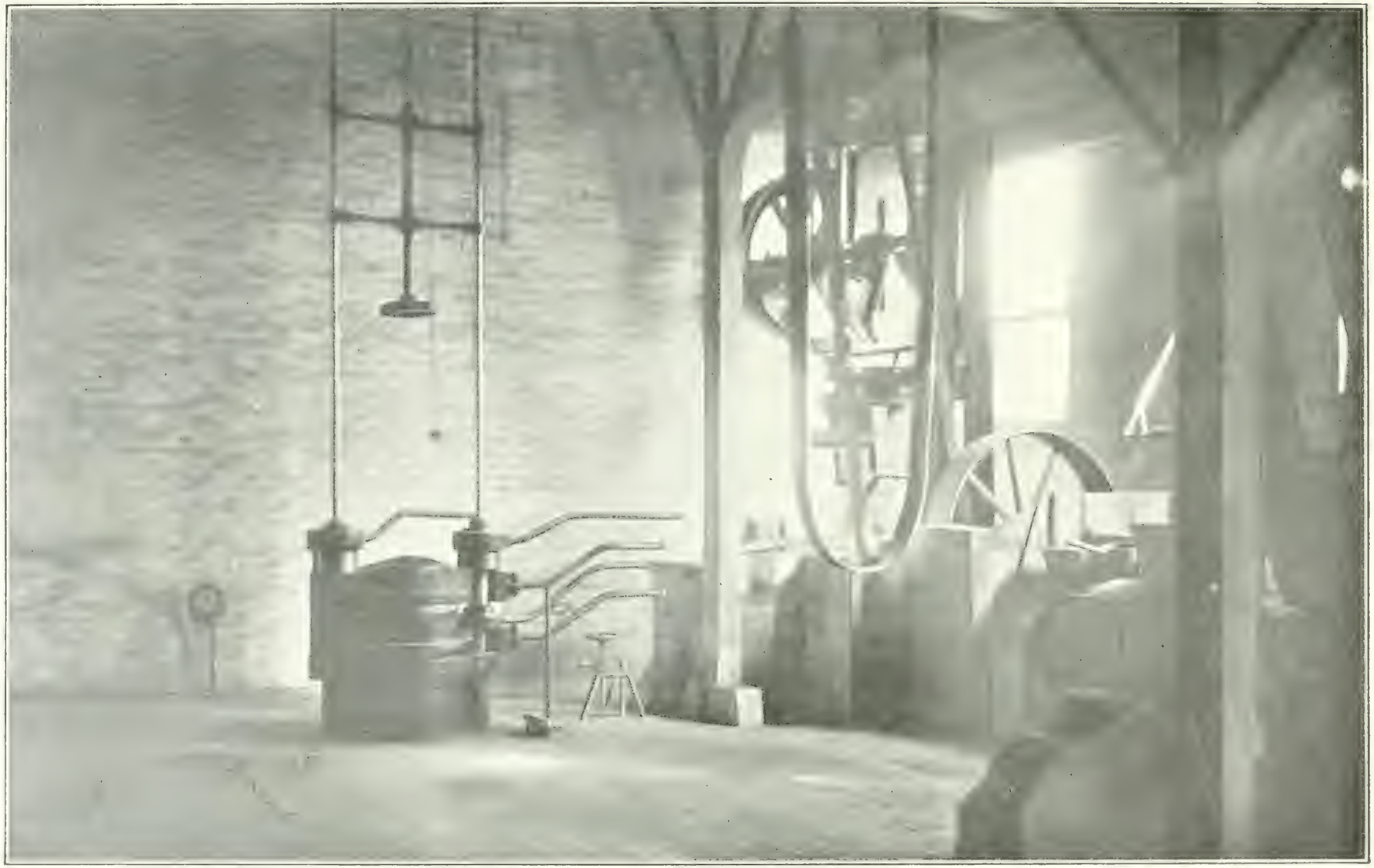
Scale 40 feet to 1 Inch



The Canadian Metal Co., (Limited.)—Zinc Smelter, Frank, Alta.



CONDEN'S METAL CO., PITTSBURGH, AMERICA. DISTILLATION OILS.



The Canadian Metal Co., (Limited.)—Zinc Smelter.—Pottery.

Canadian Metal Co.—Gas Producers.

SESSIONAL PAPER No. 26a

Statistics of the production by provinces since 1886, are given in table 2 below :—

TABLE 2.

ABRASIVE MATERIALS.

ANNUAL PRODUCTION OF GRINDSTONES.

CALENDAR YEAR.	NOVA SCOTIA.		NEW BRUNSWICK.		TOTAL.		AVERAGE VALUE PER TON.
	Tons.	Value.	Tons.	Value.	Tons.	Value.	
1886	1,765	$24,050	2,255	$22,495	4,020	$46,545	$11 58
1887	1,710	25,020	3,582	38,988	5,292	64,008	12 10
1888	1,971	20,400	3,793	30,729	5,764	51,129	8 87
1889	712	7,128	2,692	23,735	3,404	30,863	9 07
1890	850	8,536	4,034	33,804	4,884	42,340	8 67
1891	1,980	19,800	2,499	22,787	4,479	42,587	9 51
1892	2,462	27,610	2,821	23,577	5,283	51,187	9 69
1893	2,112	21,000	2,488	17,379	4,600	38,379	8 34
1894	2,128	16,000	1,629	16,717	3,757	32,717	8 71
1895	1,400	14,000	2,075	17,932	3,475	31,932	9 19
1896	1,450	14,500	2,263	18,810	3,713	33,310	8 97
1897	1,407	17,500	3,165	24,840	4,572	42,340	9 26
1898	1,422	12,350	3,513	32,425	4,935	44,775	9 07
1899	1,378	10,300	3,133	32,965	4,511	43,265	9 59
1900	1,411	12,600	4,128	40,850	5,539	53,450	9 65
1901	358	3,200	4,223	42,490	4,581	45,690	9 97
1902	1,074	8,118	3,559	36,000	4,633	44,118	9 52
1903	1,337	9,562	4,201	38,740	5,538	48,302	8 72
1904	1,029	7,332	3,620	35,450	4,649	42,782	9 20
1905	1,020	10,200	4,520	52,175	5,540	62,375	11 25

The imports of grindstones into Canada, principally into the provinces of Ontario and Quebec, reached a total value in 1905, of $49,747, made up of grindstones not mounted and not less than three feet in diameter to the value of $40,869 and other grindstones to the value of $8,878.

Statistics of the exports of grindstones and of the imports of grindstones, burrstones, emery and pumice stone, are shown in tables 3, 4, 5, 6 and 7, following :—

TABLE 3.

ABRASIVE MATERIALS.

EXPORTS OF GRINDSTONES.

Calendar Year.	Value.
1884	$28,186
1885	22,606
1886	24,185
1887	28,769
1888	28,176
1889	29,982
1890	18,564
1891	28,433
1892	23,567
1893	21,672
1894	12,579
1895	16,723
1896	19,139
1897	18,807
1898*	25,588
1899*	23,288
1900*	42,128
1901*	29,130
1902*	24,489
1903*	27,659
1904*	35,612
1905	24,868

* Including stone for the manufacture of grindstones.

TABLE 4.
ABRASIVE MATERIALS.
IMPORTS OF GRINDSTONES.

Fiscal Year.	Duty.	Tons.	Value.
1880		1,044	$11,714
1881		1,359	16,895
1882		2,098	30,654
1883		2,108	31,456
1884		2,074	30,471
1885		1,148	16,065
1886		964	12,803
1887		1,309	14,815
1888		1,721	18,263
1889		2,116	25,564
1890		1,567	20,569
1891		1,381	16,991
1892		1,484	19,761
1893		1,682	20,987
1894		1,918	24,426
1895		1,770	22,834
1896		1,862	26,561
1897		1,521	25,547
1898			22,217
1899			27,476
1900			34,382
1901			39,068
1902			40,838
1903			53,388
1904			46,039
1905 Grindstones not mounted and not less than 36 inches in diameter	15 p.c.		40,869
1905 Grindstones N.E.S.	25 p.c.		8,878
			49,747

TABLE 5.
ABRASIVE MATERIALS.
IMPORTS OF BURRSTONES.

Fiscal Year.	Value.	Fiscal Year.	Value.
1880	$12,049	1893	$ 3,552
1881	6,337	1894	3,029
1882	15,143	1895	2,172
1883	13,242	1896	2,049
1884	5,365	1897	1,827
1885	4,517	1898	1,813
1886	4,062	1899	1,759
1887	3,545	1900	1,546
1888	4,753	1901	5,762
1889	5,465	1902	2,559
1890	2,506	1903	586
1891	2,089	1904	35
1892	1,464	1905	2,607

*Burrstones in blocks, rough or unmanufactured, not bound up or prepared for binding into mill-stones. Duty free.

TABLE 6.

ABRASIVE MATERIALS.

IMPORTS OF EMERY.

Fiscal Year.	Emery. *a*.	Mfrs. of Emery. *b*.
1885	$ 5,066	$ 4,920
1886	11,877	5,832
1887	12,023	4,598
1888	15,674	4,001
1889	13,565	3,948
1890	16,922	5,313
1891	16,179	6,665
1892	17,782	6,492
1893	17,762	5,606
1894	14,433	2,223
1895	14,569	7,775
1896	16,287	11,913
1897	16,318	11,231
1898	17,661	15,478
1899	21,454	22,343
1900	19,312	25,615
1901	16,311	22,190
1902	14,476	23,892
1903	18,058	22,177
1904	21,626	29,273
1905	21,980	33,250

a Emery in bulk, crushed or ground. Duty free.
b Emery wheels and manufactures of emery. Duty 25 p.c.

TABLE 7.

ABRASIVE MATERIALS.

IMPORTS OF PUMICE STONE.

Fiscal year.	Value.
1885	$ 9,384
1886	2,777
1887	3,594
1888	2,890
1889	3,232
1890	3,003
1891	3,696
1892	3,282
1893	3,798
1894	4,160
1895	3,609
1896	3,721
1897	2,903
1898	3,829
1899	5,973
1900	5,604
1901	5,516
1902	7,254
1903	6,152
1904	6,537
*1905	8,447

* Pumice and pumice stone, ground or unground. Duty free.

Tripolite.—Owing to the destruction by fire of the mill at Bass River, Nova Scotia, in October, 1905, after having run about two months only, the shipments of tripolite were comparatively small, amounting to only 200 tons, valued at $3,600 at the mill. Practically nothing was done on the tripolite deposits at St. Anns bay, Cape Breton.

Statistics of production since 1896, are given in the following table :—

TABLE 8.

ABRASIVE MATERIALS.

PRODUCTION OF TRIPOLITE.

Calendar Year.	Tons.	Value.
		$
1896	664	9,960
1897	15	150
1898	1,017	16,660
1899	1,000	15,000
1900	336	1,950
1901	850	15,300
1902	1,052	16,470
1903	835	16,700
1904	320	6,400
1905	200	3,600

Grindstone Quarries.

NOVA SCOTIA.—In Nova Scotia at the present time, only two quarries are operated for stone for the manufacture of grindstones, one at Lower Cove about three miles above Joggins on the Bay of Fundy in Cumberland county, the other on Quarry Island, a mile and half across the harbour from West Merigomish in Pictou county.

Lower Cove—The Lower Cove quarry is operated by the Atlantic Grindstone Coal and Railway Company, (Fred Huestis, manager). Located on the Bay of Fundy shore, the stone, a light gray in colour, was at first quarried at the water's edge, but the present point of operation is just a little to the east. The rock dips steeply to the south with a strike east and west. The quarry as now operated is down to a depth of 60 feet. A wire cable $2\frac{1}{2}$ inches in diameter and span of nearly 1,000 feet with travelling clutch and lifting capacity of about 20 tons, delivers the stone to tram cars which convey it to the gang saws of which there are six in operation. The plant is very complete and ample for a large output. Power is supplied by two Mumford boilers of 125 horse-power each, built by the Robb

Engineering Company of Amherst, operating through a 250 h.p. tandem cylinder compound engine built by the same firm.

In the quarry there are several ledges of very good stone ; there is also a great deal of 'bull' and broken rock, so that quarrying has been somewhat expensive. Grindstones are being made in all sizes from 5 inches to 7 feet in diameter and varying in width from $\frac{3}{4}$ of an inch to 15 inches. About five different grits are met with. The coarser grits are used for grinding axes, &c., the medium for grinding scythes, hay knives, &c., and the finer grit or blue stone for cutlery. Preparations are being made to make scythestones, whetstones, oil stones, &c. Some of the waste not suitable for grindstones is trimmed to shape and sold for foundation stone. The larger grindstones measuring 14 inches in width by 7 feet in diameter weigh about $3\frac{1}{2}$ tons.

Shipments are made chiefly by boat to Portland and Providence for points throughout the New England States and west to Chicago. A small quantity of the smaller stones is shipped by rail from Joggins station, chiefly for local markets in Nova Scotia and New Brunswick.

Quarry Island—The grindstone quarry at Quarry Island, Pictou county, is operated by James Stevenson and Jas. W. Sutherland. It is situated a mile and a half across the harbour from West Merigomish, and about 12 or 13 miles from New Glasgow, and can be approached either by boat from West Merigonish or by driving direct from New Glasgow. On the south side of the island the rock ledges from which the stone is obtained dip away from the water's edge to the northeast or north and into the bank on which there is a very heavy and rising covering of clay of a height of 21 feet and upwards so that it is not profitable to follow the stone very far under the bank. For a distance of 400 feet or more along the shore stone has been taken out at at various places, operations having extended over a long period of time with a comparatively small annual output. The stone is got out by hand-drilling and blasting, is rough trimmed into shape by hand and turned on a lathe, and grindstones are made varying from 4 to 6 feet in diameter. Two derricks operated by steam power are used to raise stone from the main opening. When sufficient stone is accumulated, shipments are made by schooner to New England points, and occasionally car load lots are shipped from Merigomish, in which case the stone is scowed across the harbour and hauled a half mile up hill to Merigomish Station. Coal for use under the boiler has also to be scowed across the harbour. About 6 or 8 men were employed under Captain Stevenson during 1905.

New Brunswick.—Grindstone quarries were worked in the province of New Brunswick during 1905 at Clifton, Stonehaven and Grande Anse on the Bay of Chaleur in Gloucester county and at Woodpoint and Rockport on Chignecto Bay in Westmoreland county, while stone for grinding wood pulp was made at Wm. Hood and Sons quarry at Indiantown, on the Miramichi river, Northumberland county.

Three quarries were operated on the Bay of Chaleur during 1905, the most important being that at Stonehaven owned by Joseph Read & Co., in fact this and the quarries at Woodpoint owned by Henry Read of Sackville are the largest producing grindstone quarries at present worked. The quarries on the Bay of Chaleur are all on the shore about a mile from the line of the Caraquet and Gulf Shore Railway and from 20 to 30 miles from Bathurst on the Intercolonial Railway.

The Stonehaven quarry was in charge of Mr. Gordon Read with Amos Como as foreman. The stone was formerly quarried at low water, and floated in under rafts at high tide, but at present a sea wall built of clay and stone and being constantly added to by the waste from the quarry protects a considerable area from which stone can be taken below sea level. The stone is taken out and rough trimmed mostly by hand, a great deal being done under a system of piece work. Two gangs of saws and 8 lathes are operated in the mill by a 62-h.p. engine, while an engine of 25-h.p. is used for operating three derricks and pumping the water from the quarry. Grindstones of all sizes are made up to 7 feet by 15 inches as well as the small scythe and whetstones. The annual output is now over 2,500 tons, valued at the quarry at from $10 to $12 per gross ton. Shipments are made to wholesale firms in Quebec and Montreal and to New Haven, Boston and other New England points. Freight rates to Montreal are about 16½ cents per hundred pounds and to New Haven, Conn., from $3 to $3.50 per gross ton.

About two miles to the west of Stonehaven, grindstones are being made by W. R. Knowles at Clifton. The sandstone is covered by about a depth of 32 feet of clay and shale and occurs at a height of about 70 feet above sea level. There is an available thickness of about 14 feet of stone suitable for grindstone making. Grindstones are made varying in size from 12 inches to 7 feet in diameter and shipments are made chiefly to New England points. Steam machinery is employed to operate a steam shovel for removing the over-burden of clay and shale and for running gang saws and lathes for cutting and finishing the stone. The annual output is from 300 to 400 tons. About 6 feet

below the freestone is found a small 6 inch seam of coal which has been mentioned in early geological reports, and at a further depth of 60 feet, a second 6 inch coal seam is found.

Between Clifton and Stonehaven is a quarry formerly worked by Lombard & Co. This quarry has, however, been abandoned for the present, and the company has opened a new quarry at Grande Anse about 10 miles further along the coast, where the usual machinery, gang saws and lathes, for finishing the stone is set up. This quarry is being worked by Messrs. McGill & Co., for Lombard & Co. of Boston. The sand-tone at Grande Anse was also being used in building a large catholic church at that place.

The grindstone quarries in Westmoreland county, owned by Henry C. Read of Sackville, are worked in much the same way as those on the Bay of Chaleur. The grindstones are largely quarried at Rockport and brought to Woodpoint to be finished on the lathes. The annual output is from 1,200 to 1,500 tons.

At Woodpoint a building stone quarry is also worked by the same operator and a large quantity of good sandstone has been removed and used in many important buildings throughout the country.

At Indiantown, in Northumberland county, Messrs. Wm. Hood & Son of Montreal, have been opening up and working a sandstone quarry. The stone of light gray or buff colour has found a ready market in Montreal and has already been used in some important buildings. Some of the courses of stone are found to be well adapted to the manufacture of woodpulp stones, and since 1899 these have been supplied to Canadian paper makers and are also being exported to the United States.

The stone is highly commended by the firms using them. In size they measure about 54 inches diameter by 27 inches face, and are worth about $75 each in car load lots at the quarry.

SESSIONAL PAPER No. 26a

ASBESTUS.

The variations in this industry during the past twenty-five years are illustrated by the figures in tables Nos. 1 and 2.

TABLE 1.

ASBESTUS.

PRODUCTION.—1896 TO 1905.

	Tons.	Value.	Average Value per ton.
1896—Asbestus	10,892	$ 423,066	$ 38.84
Asbestic	1,358	6,790	5.00
	12,250	$ 429,856	$ 35.09
1897—Asbestus	13,202	$ 399,528	$ 30.26
Asbestic	17,240	45,840	2.66
	30,442	$ 445,368	$ 14.63
1898—Asbestus	16,124	$ 475,131	$ 29.46
Asbestic	7,661	16,066	2.10
	23,785	$ 491,197	$ 20.65
1899—Asbestus	17,790	$ 468,635	$ 26.34
Asbestic	7,746	17,214	2.22
	25,536	$ 485,849	$ 19.03
1900—Asbestus	21,621	$ 729,886	$ 33.76
Asbestic	7,520	18,545	2.46
	29,141	$ 748,431	$ 25.68
1901—Asbestus	32,892	$1,248,645	$ 37.96
Asbestic	7,325	11,114	1.52
	40,217	$1,259,759	$ 31.32
1902—Asbestus	30,219	$1,126,688	$ 37.28
Asbestic	10,197	21,631	2.12
	40,416	$1,148,319	$ 28.41
1903—Asbestus	31,129	$ 915,888	$ 29.42
Asbestic	10,548	13,869	1.31
	41,677	929,757	$ 22.31
1904—Asbestus	35,611	$1,213,502	$ 34.07
Asbestic	12,854	12,850	1.00
	48,465	$1,226,352	$ 25.30
1905—Asbestus	50,669	$1,486,359	$ 29.33
Asbestic	17,594	16,900	.96
	68,263	$1,503,259	$ 22.02

TABLE 2.

ASBESTUS.

PRODUCTION, ETC.—1880 TO 1895.

Calendar Year.	Production.			Exports. Average value per ton.
	Tons (2,000 lbs.)	Value.	Average value per ton.	
		$	$ cts.	$ cts.
1880	380	24,700	65.00	
1881	540	35,100	65.00	
1882	810	52,650	65.00	
1883	955	68,750	71.98	
1884	1,141	75,097	65 80	
1885	2,440	142,441	58.37	
1886	3,458	206,251	59.64	
1887	4,619	226,976	49.14	63.25
1888	4,404	255,007	57.90	70.56
1889	6,113	426,554	69 77	64.44
1890	9,860	1,260,240	127.81	75.52
1891	9,279	999,878	107.75	70.07
1892	6,082	390,462	64.19	69.35
1893	6,331	310,156	49.02	57.24
1894	7,630	420,825	55.15	59.82
1895	8,756	368,175	42.05	56.66

Exports taken as production.

TABLE 3.

ASBESTUS.

EXPORTS.

Calendar Year.	Tons.	Value,	Average value per ton.
1892	5,380	$373,103	$69.35
1893	5,917	338,707	57.24
1894	7,987	477,837	59.82
1895	7,442	421,690	56.66
1896	11,842	567,967	47.96
1897	15,570	473,274	30.40
1898	15,346	494,012	32.19
1899	17,883	473,148	26.46
1900	16,993	693,105	39.61
1901	32,269	1,069,918	33.16
1902	31,074	995,071	32.02
1903	31,780	891,033	28.04
1904	37,272	1,160,887	31.14
1905	47,031	1,386.115	29.47

TABLE 4.

ASBESTUS.

IMPORTS.

Fiscal Year.	Value.	Fiscal year.	Value.
1885.	$ 674	1895.	$26,094
1886.	6,831	1896.	23,900
1887.	7,836	1897.	19,032
1888.	8,793	1898.	26,389
1889.	9,943	1899.	32,607
1890.	13,250	1900.	43,455
1891.	13,298	1901.	50,829
1892.	14,090	1902.	52,464
1893.	19,181	1903.	75,465
1894.	20,021	1904.	83,827
		1905	116,836

*Asbestus in any form other than crude, and all manufactures of. Duty 25 p.c.

According to the returns received from operators there are three main grades of product, viz.: crude, mill stock and asbestic. The former represents the portions of clean fibre picked out by hand; the mill stock, as its name implies, represents a number of different products of the milling process, whilst the by-product, for which the name 'asbestic' has been adopted, consists of the residual serpentine sand, carrying a large proportion of very short fibre. This finds a sale for plastering and other uses, taking the place of the ordinary sand and hair, over which it has been claimed to have many advantages. The asbestus fibre is sold to manufacturers, who produce with it a great variety of finished articles, mill board, paper, woven goods, &c., for use where a fireproof and non-conducting material is called for.

The asbestus product of Canada comes altogether from one small district in the eastern townships of Quebec province. In this district are two chief centres, viz.: Thetford and Black Lake, both situated on the line of the Quebec Central Railway, which connects the town of Sherbrooke with Point Lévis, opposite the city of Quebec. Outside of the just-mentioned district the only largely producing mine is situated on another small serpentine area at Danville, about twenty miles in a westerly direction from the before mentioned.

These worked asbestus mines are situated on a range of extensive masses of olivine diabase rocks, which extend from the Vermont boundary in a northeasterly direction nearly to the extremity of the Gaspé peninsula. At places these rocks are considerably serpentinised, and where the asbestus occurs are completely changed into serpentine.

These serpentine areas are full of veins of chrysotile or fibrous serpentine, cutting the solid mass in every direction. The fibre lies at right angles to the walls of the little veinlets, which vary in tranverse dimensions so that in quarrying fibre of all lengths up to one or two inches is obtained.

The quarrying is done with the aid of power drills and ordinary mining appliances for breaking and hoisting, and the fibre is separated by a combined process of hand sorting and crushing, with separation of the rock from the fibre by special machinery. In the Bulletin on Asbestus, issued by the Geological Survey in 1903, the following description of one of the mills will give a general idea of the method followed, with slight differences, by the operators.

The milling process is largely automatic throughout. After the rock suitable for hand cobbing is extracted, the bulk of the output is run to the mill by steam trams, and the rough material passes at once to a Blake crusher, generally of two dimensions, where it is sized for the rolls. In the King Bros'. mills these are corrugated, and the rock from the crusher goes directly through the rolls, from which it passes to a series of cyclones that reduce the rock to powder and separate the contained fibre. Exhausts are provided by which the greater part of this is removed and the material from the cyclone passes on to a set of shaking screens of different sized mesh by which the fiberized material is separated ready for bagging. Boys are stationed at points to regulate the supply of the material along the conveying belts. The bottom of the mine holds a considerable amount of broken fibre, generally wet and dirty, and this before going through the mill is put through a drying cylinder set at an angle of about 5 degrees and revolving slowly, by which the moisture is readily extracted. At present the motive power in all the mills is steam.

While the general principle in all these mills is practically the same, scarcely two are built on precisely the same plan. In some, the rolls are discarded, and ot! er points of difference are seen depending upon the conditions at different mines. The extraction of the fibre is successfully accomplished at all the mines, and a large amount of the rock output which formerly would have gone to the dump as waste material is now profitably utilized. At the present time, at Black Lake, with the exception of Mr. Johnston's new mine, and that of the American Asbestus Co., which is still in the development stage, the greater portion of the output in this district is sent to the mill and the production of crude asbestus which at one time formed an important part of the output at this place has in consequence largely fallen off.

COAL.

The production of coal for 1905 has easily retained its first place in the table showing the relative importance of the various Canadian mineral products. Fossil fuel in 1905 contributed nearly 26 per cent of the total mineral production of Canada. (See table, page 9.) Gold, which comes next in the list, contributed slightly over 21 per cent.

For the year ending December 31st 1905, Canada's coal production amounted to 8,667,948 short tons, valued at $17,520,263, of which the detailed statistics are given in tables 1, 2 and 3.

TABLE 1.
COAL.
PRODUCTION BY PROVINCES, 1903, 1904 and 1905.

Province.	1903.		1904.		1905.	
	Tons.	Value.	Tons.	Value.	Tons.	Value.
		$		$		$
Nova Scotia.....	5,653,338	10,095,246	5,596,241	9,993,288	5,646,583	10,083,184
British Columbia	1,676,581	4,490,844	1,862,625	4,989,174	1,945,452	5,211,030
North-west Territories including Yukon	614,445	1,316,743	786,617	1,591,545	1,046,513	2,167,249
New Brunswick.	16,000	40,000	9,112	18,224	29,400	58,800
Total.....	7,960,364	15,942,833	8,254,595	16,592,231	8,667,948	17,520,263

TABLE 2.
COAL.
PRODUCTION. COMPARISON OF 1904 AND 1905.

Province	INCREASE OR DECREASE.			
	Tons.	Per cent.	Value. $	Per cent.
Nova Scotia	*i* 50,342	*i* ·89	*i* 89,896	*i* ·89
British Columbia.....	*i* 82,827	*i* 4·45	*i* 221,856	*i* 4·45
North-west Territories including Yukon	*i* 259,896	*i* 33·04	*i* 575,704	*i* 36·17
New Brunswick.....	*i* 413,353	*i* 222·65	*i* 40,576	*i* 222·65
Dominion.....	*i* 413,353	*i* 5·01	*i* 928,032	*i* 5·59

i Increase. *d* Decrease.

TABLE 3.

COAL.

ANNUAL PRODUCTION SHOWING THE INCREASE OR DECREASE EACH YEAR

Calendar Year.	Tons.	Value.	Average Value per Ton	Increase (*i*) or Decrease (*d*) in Tonnage.	Incr. (*i*) or Decr. (*d*) per cent.
1886.....	2,116,653	$3,739,840	$1 77	.....	.....
1887.....	2,429,330	4,388,206	1 81	*i* 312,677	*i* 14·8
1888.....	2,602,552	4,674,140	1 80	*i* 173,222	*i* 7·1
1889.....	2,658,303	4,894,287	1 84	*i* 55,751	*i* 2·1
1890.....	3,084,682	5,676,247	1 84	*i* 426,379	*i* 16·0
1891.....	3,577,749	7,019,425	1 96	*i* 493,067	*i* 16·0
1892.....	3,287,745	6,363,757	1 94	*d* 290,004	*d* 8·1
1893.....	3,783,499	7,359,080	1 95	*i* 495,754	*i* 15·1
1894.....	3,847,070	7,429,468	1 93	*i* 63,571	*i* 1·7
1895.....	3,478,344	6,739,153	1 94	*d* 368,72'	9·6
1896.....	3,745,716	7,226,462	1 93	*i* 267,372	7·7
1897.....	3,786,107	7,303,597	1 93	*i* 40,391	*i* 1·1
1898.....	4,173,108	8,224,288	1 97	*i* 387,001	*i* 10·2
1899.....	4,925,051	10,283,497	2 09	*i* 751,943	*i* 18·0
1900.....	5,777,319	13,742,178	2 38	*i* 852,268	*i* 17·3
1901.....	6,486,325	12,699,243	1 96	*i* 709,006	*i* 12·3
1902.....	7,466,681	15,210,877	2 04	*i* 780,356	*i* 15·1
1903.....	7,960,364	15,942,833	2 00	*i* 493,683	*i* 6·6
1904.....	8,254,595	16,592,231	2 01	*i* 294,231	*i* 3·7
1905.....	8,667,948	17,520,263	2 02	*i* 413,353	*i* 5·0

The following short table is illustrative of the growth of the coal industry, in each of the provinces for some time back. It gives the proportion of the total production to be credited to each province at various periods since 1874.

Province.	1874.	1880.	1890.	1898.	1899.	1900.	1901.	1902.	1903.	1904.	1905.
	p. c.	p. c.	p. c.	p. c.	p. c.	p. c.	p. c.	p. c.	p. c.	p. c.	p. c.
Nova Scotia } New Bruns. }	91	79	71	61·6	64·2	62·9	64·4	69·4	71·3	68·0	65·5
Saskatchewan Alberta and Yukon.	8	20	4	8·3	6·8	6·1	6·0	6·4	7·7	9·5	12·1
B. Columbia.	.....	.....	25	30·3	29·0	31·0	29·6	24·2	21·0	22·5	22·4

Table 2 shows a total increase for 1905 of 413,353 tons over 1904, which represents 5.01 per cent. All of the provinces contributed to this result, the production this year having in every case been greater than in 1904. Serious labour troubles closed some of the mines on Vancouver island for nearly four months during the year, but in spite of these circumstances even British Columbia shows an increase, which, however, is not as substantial as that of the previous year.

The new provinces of Alberta and Saskatchewan have been advancing at a very rapid rate. The growing settlement of the country is of course responsible for a largely increased domestic consumption and this market will grow from year to year for a long time to come yet.

Nova Scotia has remained practically stationary since 1903. This year shows a slight increase, whereas last year a diminution had to be recorded as compared with the production for 1903.

In New Brunswick, the coal industry shows signs of great activity as compared with previous years. The production has increased from 9,000 tons in 1904 to over 29,000 tons; although the coal mining operations of this province are on a small scale owing to the thinness of the seams, yet the industry is important from the local standpoint. The quality of the coal is excellent.

The following tables give the statistics of imports and exports of coal.

TABLE 4.

COAL.

EXPORTS.

CALENDAR YEAR.	PRODUCE OF CANADA.	NOT PRODUCE.	CALENDAR YEAR.	PRODUCE OF CANADA.	NOT PRODUCE.
	Tons.	Tons.		Tons.	Tons.
1873	420,683	5,403	1890	724,486	82,534
1874	310,988	12,859	1891	971,259	77,827
1875	250,348	14,026	1892	823,733	93,988
1876	248,638	4,995	1893	960,312	102,827
1877	301,317	4,829	1894	1,103,694	89,786
1878	327,959	5,468	1895	1,011,235	96,836
1879	306,648	8,468	1896	1,106,661	116,774
1880	432,188	14,217	1897	986,130	101,848
1881	395,382	14,245	1898	1,150,029	99,189
1882	412,682	37,576	1899	1,293,169	101,004
1883	486,811	44,388	1900	1,787,777	62,776
1884	474,405	62,665	1901	1,573,661	53,894
1885	427,937	71,003	1902	2,090,268	23,453
1886	520,703	78,443	1903	1,954,629	27,138
1887	580,965	89,098	1904	1,557,412	27,308
1888	588,627	84,316	1905	1,635,287	86,792
1889	665,315	89,294			

TABLE 5.

COAL.

EXPORTS.—NOVA SCOTIA AND BRITISH COLUMBIA.

Calendar Year.	Nova Scotia.		*British Columbia.	
	Tons.	Value.	Tons.	Value.
1874	252,124	$647,539	51,001	$ 278,180
1875	179,626	404,351	65,842	356,018
1876	126,520	263,543	116,910	627,754
1877	173,389	352,453	118,252	590,263
1878	154,114	293,795	165,734	698,870
1879	113,742	203,407	186,094	608,845
1880	199,552	344,148	219,878	775,008
1881	193,081	311,721	187,791	622,965
1882	216,954	390,121	179,552	628,437
1883	192,795	336,088	271,214	946,271
1884	222,709	430,330	245,478	901,440
1885	176,287	349,650	250,191	1,000,764
1886	240,459	441,693	274,466	960,649
1887	207,941	390,738	356,657	1,262,552
1888	165,863	330,115	405,071	1,605,650
1889	186,608	396,830	470,683	1,918,263
1890	202,387	426,070	508,882	1,977,191
1891	194,867	417,816	767,734	2,958,695
1892	181,547	407,980	599,716	2,317,734
1893	203,198	470,695	708,228	2,693,747
1894	310,277	633,398	770,439	2,855,216
1895	241,091	534,479	728,283	2,692,562
1896	380,149	787,270	679,799	2,507,752
1897	307,128	642,754	630,341	2,221,737
1898	309,158	629,363	813,843	2,948,428
1899†	459,260	827,941	781,809	2,947,369

*See foot-note, table 16. †Since 1899, exports by provinces have not been published in Trade and Navigation Report.

TABLE 6.

COAL.

IMPORTS OF BITUMINOUS COAL.

Fiscal Year.	Tons.	Value.	Fiscal Year.	Tons.	Value.
1880	457,049	$1,220,761	1893	1,603,154	3,967,764
1881	587,024	1,741,568	1894	1,359,509	3,315,094
1882	636,374	1,992,081	1895	1,444,928	3,321,387
1883	911,629	2,996,198	1896	1,538,489	3,299,025
1884	1,118,615	3,613,470	1897	1,543,476	3,254,217
1885	1,011,875	3,197,539	1898	1,684,024	3,179,595
1886	930,949	2,591,554	1899	2,171,358	3,691,946
1887	1,149,792	3,126,225	1900	2,439,764	4,310,964
1888	1,231,234	3,451,661	1901	2,516,392	4,956,025
1889	1,248,540	3,255,171	1902	3,047,392	5,712,058
1890	1,409,282	3,528,959	1903	3,511,412	7,776,717
1891	1,598,855	4,060,896	1904	4,053,900	9,108,208
1892	1,615,220	4,099,221	1905*	4,176,274	8,002,896

*Duty, 53c. per ton.

Table G.

COAL

PRODUCTION

A.	*Canada*	*Tons*
AS.	*Ditto*	*Value*
B.	*Nova Scotia*	*Tons*
C.	*New Brunswick and Northwest Territories*	..
D.	*British Columbia*	..
E	*Exports The Produce of Canada*	..

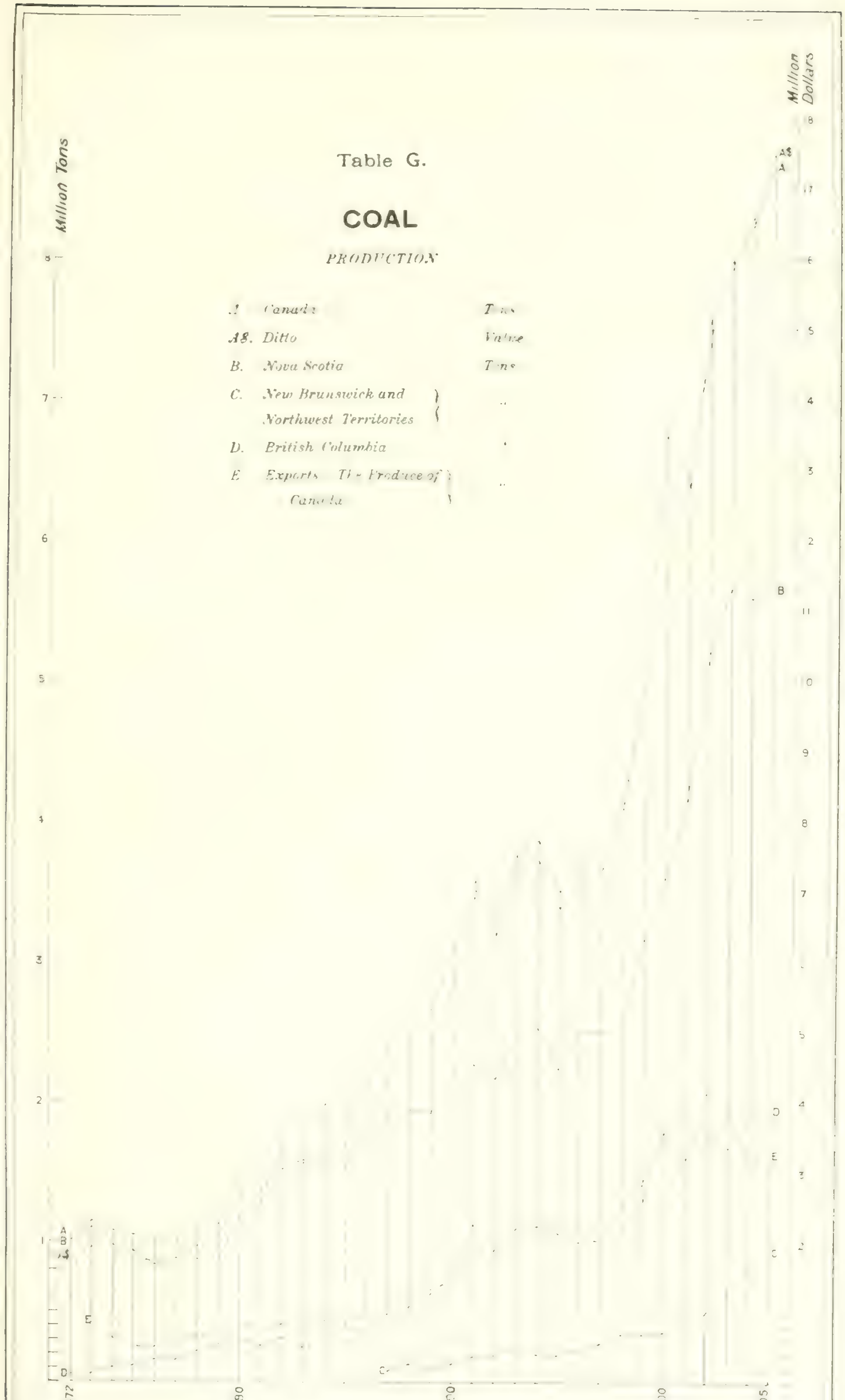


TABLE 7.

COAL.

IMPORTS OF ANTHRACITE COAL.

Fiscal Year.	Tons.	Value.	Fiscal Year.	Tons.	Value.
1880	516,729	$1,509,960	1893	1,500,550	$ 6,355,285
1881	572,092	2,325,937	1894	1,530,522	6,354,040
1882	638,273	2,666,356	1895	1,404,342	5,350,627
1883	754,891	3,344,936	1896	1,574,355	5,667,096
1884	868,000	3,831,283	1897	1,457,295	5,695,168
1885	910,324	3,909,844	1898	1,460,701	5,874,685
1886	995,425	4,028,050	1899	1,745,460	6,490,509
1887	1,100,165	4,423,062	1900	1,654,401	6,602,912
1888	†2,138,627	5,291,875	1901	1,933,283	7,923,950
1889	1,291,705	5,199,481	1902	1,652,451	7,021,939
1890	1,201,335	4,595,727	1903	1,456,713	7,028,664
1891	1,399,067	5,224,452	1904*	2,275,018	10,461,223
1892	1,479,106	5,640,346	1905	2,604,137	12,093,371

* Coal anthracite, and anthracite coal dust. Duty free.

† In Table 7, Imports of Anthracite Coal, a very considerable increase will be noticed in 1888 over 1887, an increase of over ninety-four per cent, the falling off again in 1889 being quite as remarkable. The average values per ton for the three years 1887, 1888 and 1889, were $4.02, $2.47 and $4.03 respectively. Although a duty of fifty cents per ton on anthracite coal was removed May 13, 1887, it is hardly thought this would account for the changes indicated, and unless some error may possibly have crept into the Trade and Navigation Report, no explanation is available.

TABLE 8.

COAL.

IMPORTS OF COAL DUST.

Fiscal Year.	Tons.	Value.	Fiscal Year.	Tons.	Value.
1880	3,565	$ 8,877	1893	109,585	$ 44,474
1881	337	666	1894	117,573	49,510
1882	471	900	1895	181,318	52,221
1883	8,154	10,082	1896	210,386	53,742
1884	12,782	14,600	1897	225,562	59,609
1885	20,185	20,412	1898	229,445	45,556
1886	36,230	36,996	1899	276,547	44,717
1887	31,401	33,178	1900	330,174	98,349
1888	28,808	34,730	1901	414,432	275,559
1889	39,980	47,139	1902	489,548	264,550
1890	53,104	29,818	1903	550,883	420,317
1891	60,127	36,130	1904	608,041	544,123
1892	82,091	39,840	1905*	650,261	343,456

* Duty 20 p.c., not over 13c. per ton.

The imports of coal into Canada comprise bituminous and anthracite. The former is mainly to supply the industrial wants of the province of Ontario and Western Quebec, whereas the anthracite is almost exclusively used for domestic purposes. The Western provinces derive

their domestic supply from the Cascades coal field, on the eastern slope of the Rocky Mountains on the main line of the Canadian Pacific Railway, where a good anthracite is produced, and also from the Belly river field, the Crows Nest Pass branch of the same railway, which yields a soft coal, high in fixed carbon, greatly prized for domestic purposes.

The following calculations show that Canada has to import about one half of the coal it consumes, but if we take into consideration the quantities that are exported from British Columbia and Nova Scotia, the Canadian production of coal would fill approximately 60 per cent of the requirements of the Dominion.

CONSUMPTION OF COAL IN CANADA, 1905.

	Tons.	
Production, Table 3	8,667,948	
Exports of Canada, Table 4	1,635,287	
Home consumption of Canadian coal		7,032,661
Imports Tables 6, 7 and 8	7,430,672	
Exports net produce	86,792	
Canadian consumption of imported coal		7,343,880
Total consumption of coal in Canada		14,376,541

TABLE 9.

COAL.

CONSUMPTION OF COAL IN CANADA.

Calendar Year	Canadian.	Imported.	Total.	Percentage Canadian.	Percentage Imported.	Consumption per capita.
	Tons.	Tons.	Tons.			Tons.
1886	1,595,950	1,884,161	3,480,111	45·9	54·1	·758
1887	1,848,365	2,192,260	4,040,625	45·7	54·3	·871
1888	2,013,925	3,314,353	5,328,278	37·8	62·2	1·137
1889	1,992,988	2,490,931	4,483,919	44·4	55·6	·946
1890	2,360,196	2,581,187	4,941,383	47·8	52·2	1·031
1891	2,606,490	2,980,222	5,586,712	46·7	53·3	1·153
1892	2,464,012	3,082,429	5,546,441	44·4	55·6	1·133
1893	2,823,187	3,110,462	5,933,649	47·6	52·4	1·198
1894	2,743,376	2,917,818	5,661,194	48·5	51·5	1·130
1895	2,467,109	2,933,752	5,400,861	45 7	54·3	1·066
1896	2,639,055	3,206,456	5,845,511	45·1	54·9	1·140
1897	2,799,977	3,124,485	5,924,462	47·3	52·7	1·143
1898	3,023,079	3,274,981	6,29-,060	48·0	52·0	1·200
1899	3,631,882	4,092,361	7,724,243	47·0	53·0	1·454
1900	3,989,542	4,361,563	8,351,105	47·8	52·2	1·561
1901	4,912,664	4,810,213	9,722,877	50·5	49·5	1·810
1902	5,376,413	5,165,938	10,542,351	51·0	49·0	1·927
1903	6,005,735	5,491,870	11,507,605	52·2	47·8	2·055
1904	6,697,183	6,909,651	13,606,834	49·2	50·8	2·346
1905	7,032,661	7,343,880	14,376,541	48·9	51·1	2·396

We give below the main features of the year's development of the coal mining industry by provinces.

Nova Scotia.—In Cape Breton county seven of the collieries of the Dominion Coal Company shipped continuously. The eighth colliery, which is the new mine, Dominion No. 6, started to ship in June. This No. 6 is situated on the point of land formed by Big Glace Bay on the one side and Schooner Pond on the other. Two double slopes have been driven on the Phalen seam, one pair being called the East Slope and the other the West Slope. The two pairs are not parallel but converge towards the outcrop, the angle between them being somewhat over 70 degrees. The mouths of the slopes are sufficiently near to one another to be worked by one bank head which will be of steel, while the surface plant will be modern and up to date.

Another feature of the year in the Dominion Coal Company's field is the extensive submarine development, which has been undertaken with the view of extending the workings as far as possible under the sea. The mine chosen for this experiment is the Hub, or Dominion No. 7. The main level in November, 1905, was in 4600 feet from the shaft, or over 3000 feet under the water from high water mark. It is intended to ultimately extract 2000 tons a day from this submarine area in this mine. It might be of interest to mention that the old names of some of the colleries have been discarded by the company and the mines are now officially designated by numbers as follows:—

Old Names.	New Designation.
Dominion No. 1.	Dominion No. 1.
Dominion No. 2 (Phalen Seam)	Dominion No. 2.
Dominion No. 4.	Dominion No. 3.
Caledonia Colliery.	Dominion No. 4.
Reserve Colliery.	Dominion No. 5.
New Mine.	Dominion No. 6.
Hub Colliery.	Dominion No. 7.
International.	Dominion No. 8.
Dominion No. 9 (Harbour Seam)	Dominion No. 9.

TABLE 10.

COAL.

NOVA SCOTIA: OUTPUT, SALES, COLLIERY CONSUMPTION, AND PRODUCTION.

Calendar Year.	Output, Tons, 2,240 lbs.	Sales, Tons, 2,240 lbs.	Colliery Consumption, Tons, 2,240 lbs.	Production* Tons 2,240 lbs.	Output, Tons, 2,000 lbs.	Sales, Tons, 2,000 lbs.	Colliery Consumption, Tons. 2,000 lbs.	Production* Tons, 2,000 lbs.	Price per Ton. 2,240 lbs.	Value of production.
1872	880,950	785,914	110,341	896,255	986,664	880,224	123,582	1,003,806	$1 75	$1,568,446
1873	1,051,467	881,106	108,398	989,504	1,177,643	986,839	121,406	1,108,245	1 75	1,731,632
1874	872,720	749,127	119,582	868,709	977,446	839,022	133,932	972,954	1 75	1,520,240
1875	781,165	706,795	124,110	830,905	874,905	791,610	139,003	930,613	1 75	1,454,084
1876	709,646	634,207	113,788	747,995	794,804	710,312	127,443	837,755	1 75	1,308,991
1877	757,496	687,065	98,841	785,906	848,396	769,513	110,702	880,215	1 75	1,375,339
1878	770,603	693,511	88,627	782,138	863,075	776,732	99,262	875,994	1 75	1,368,741
1879	788,271	688,624	84,787	773,411	882,863	771,259	94,961	866,220	1 75	1,353,469
1880	1,032,710	954,659	96,831	1,051,490	1,156,635	1,069,218	108,451	1,177,669	1 75	1,840,108
1881	1,124,270	1,035,014	107,888	1,142,902	1,259,183	1,159,216	120,834	1,280,050	1 75	2,000,079
1882	1,365,811	1,250,179	111,381	1,361,560	1,529,708	1,400,200	124,747	1,524,947	1 75	2,382,730
1883	1,422,553	1,297,523	111,949	1,409,472	1,593,259	1,453,226	125,383	1,578,609	1 75	2,466,576
1884	1,389,295	1,261,650	116,769	1,378,419	1,556,011	1,413,048	130,781	1,543,829	1 75	2,412,233
1885	1,352,205	1,251,510	127,624	1,382,134	1,514,470	1,405,051	142,939	1,547,990	1 75	2,418,735
1886	1,502,611	1,373,666	142,421	1,516,087	1,682,924	1,538,506	159,512	1,698,018	1 75	2,653,152
1887	1,670,830	1,519,684	139,777	1,659,461	1,871,330	1,702,046	156,550	1,858,596	1 75	2,904,057
1888	1,776,128	1,576,692	157,443	1,734,135	1,989,263	1,765,895	176,336	1,942,231	1 75	3,034,735
1889	1,756,279	1,555,107	158,131	1,713,238	1,967,032	1,741,720	177,107	1,918,827	1 75	2,998,167
1890	1,984,001	1,786,111	161,240	1,947,351	2,222,081	2,000,414	180,589	2,181,033	1 75	3,407,864
1891	2,044,784	1,849,945	174,983	2,024,928	2,290,158	2,071,938	195,981	2,267,919	1 75	3,543,624
1892	1,942,780	1,752,934	175,092	1,928,026	2,175,913	1,963,286	196,103	2,159,389	1 75	3,374,046
1893	2,223,042	1,977,543	205,425	2,182,968	2,489,807	2,214,848	230,076	2,444,924	1 75	3,820,194
1894	2,250,631	2,060,920	196,206	2,257,126	2,520,707	2,308,231	219,751	2,527,982	1 75	3,949,970
1895	1,999,756	1,793,098	193,639	1,986,737	2,239,727	2,008,270	216,875	2,225,145	1 75	3,476,790
1896	2,292,675	2,046,828	192,975	2,239,803	2,567,796	2,292,447	216,132	2,508,579	1 75	3,919,655
1897	2,340,031	2,044,672	181,716	2,226,388	2,620,835	2,290,032	203,522	2,493,554	1 75	3,896,179
1898	2,262,656	2,121,126	167,428	2,288,554	2,531,175	2,375,661	187,519	2,563,180	1 75	4,004,970
1899	2,865,443	2,633,989	177,460	2,811,449	3,209,296	2,950,067	198,755	3,148,822	2 00	5,622,898
1900	3,298,791	2,998,737	236,563	3,235,300	3,694,646	3,358,585	264,951	3,623,536	2 50	8,088,250
1901	3,821,033	3,411,127	301,434	3,712,561	4,279,557	3,820,462	337,606	4,158,068	1 75	6,496,982
1902	4,725,480	4,229,120	379,198	4,608 318	5,292,538	4,736,614	424,702	5,161,316	2 00	9,216,636
1903	5,215,562	4,565,720	481,903	5,047,623	5,841,429	5,113,607	539,731	5,653,338	2 00	10,095,246
1904	5,131,985	4,551,740	441,904	4,996,644	5,747,823	5,097,949	498,292	5,596,241	2 00	9,993,288
1905	5,197,877	4,613,818	427,774	5,041,592	5,821,622	5,167,476	479,107	5,646,583	2 00	10,083,184

* This Production is obtained by adding Sales and Colliery Consumption. For sales previous to 1872, see report of the Department of Mines, Nova Scotia, 1883, page 68.

TABLE 11.

COAL.

NOVA SCOTIA: COAL TRADE BY COUNTIES.

CALENDAR YEAR.	CUMBERLAND.		PICTOU.		CAPE BRETON.		OTHER COUNTIES.	
	Raised.	Sold.	Raised.	Sold.	Raised.	Sold.	Raised.	Sold.
	Tons, 2,000 lbs.	Tons, 2,000 lbs.	Tons, 2,000 lbs.	Tons, 2,000 lbs.	Tons, 2,000 lbs.	Tons, 2,000 lbs.	Tons, 2,000 lbs.	Tons, 2,000 lbs.
1st quarter	131,564	109,656	143,611	111,182	686,523	513,023	31,254	19,872
2nd "	188,951	161,334	174,598	140,971	1,130,153	983,808	55,849	40,925
3rd "	175,151	150,812	164,965	146,779	1,200,703	1,296,063	63,966	47,707
4th "	197,834	173,262	185,280	162,005	1,231,291	1,065,747	59,629	44,330
Total, 1905	693,500	595,064	668,454	560,937	4,248,970	3,858,641	210,698	152,834
" 1904	731,316	621,169	716,928	622,358	3,973,433	3,613 169	332,146	241,253

TABLE 12.

COAL.

NOVA SCOTIA:—OUTPUT BY COLLIERIES DURING THE CALENDAR YEAR 1905.

Colliery.	Tons, 2,000 lbs.	Colliery.	Tons, 2,000 lbs.
Cumberland County.		*Inverness County.*	
Chignecto	42,641	Mabou	3,549
Joggins	59,957	Port Hood	16,635
Minudie	37,860	Inverness	187,789
Scotia	3,254	*Victoria County.*	
Springhill	534,116	New Cambellton	3,224
Strathcona	10,345	*Cape Breton County.*	
Prospect	5,328	Sydney Coal Co.	4,316
Pictou County.		Dominion Coal Co.	3,572,416
		N. Scotia Steel & Coal Co.	625,303
Acadia	358,590	Gowrie and Blockhouse collieries	46,935
Nova Scotia Steel and Coal Co	43,614		
Intercolonial	266,240	Total	5,821,622

The following table shows the markets to which the Nova Scotia coal finds its way. Outside of the province itself the main outlets are the Province of Quebec and the exports to the United States.

TABLE 13.

COAL.

NOVA SCOTIA:—DISTRIBUTION OF COAL SOLD.

Markets.	Calendar Years.					
	1902.		1903.		1904	
	Tons, 2,000 lbs.	Per cent.	Tons, 2,000 lbs.	Per cent.	Tons, 2,000 lbs.	Per cent.
Nova Scotia, transported by land	727,122	14·2	918,822	18·0	1,145,255	27·4
Nova Scotia, transported by sea	977,756	19·1	724,289	14·2	485,574	9·4
Total, Nova Scotia	1,704,878	33·3	1,643,111	32·2	1,900,829	36·8
New Brunswick	435,537	8·5	474,053	9·3	477,360	9·2
Prince Edward Island	88,649	1·7	95,177	1·9	85,099	1·7
Quebec	1,609,205	31·5	1,916,384	37·6	1,721,751	33·3
Newfoundland	155,751	3·1	155,794	3·1	165,117	3·2
United States	1,009,420	19·7	730,658	14·3	755,433	14·6
West Indies	.....	....	.....	.....	2,827	·1
Other countries	110,167	2·2	82,772	1·6	59,060	1·1
Total	5,113,607	100·0	5,097,949	100·0	5,167,476	100·0

The Cape Breton Coal, Iron and Railway Company have been developing their property situated between Loon Lake and Cochran Lake, about twelve miles south-west of Glace Bay. Two slopes have been driven, one of which is now 700 feet and the other 400 feet in length. A third slope was driven upwards from the bottom of the 700 feet slope and parallel to it. The coal seam measured at the face at the bottom of the 700 foot slope, is 62 inches, but it is said to average nearly 6 feet. The Company are contemplating the erection of an up to date plant and are at present doing very extensive work on the surface, laying out a town site, constructing wide streets, etc. The mine is connected with the Sydney and Louisburg Railway, by a branch some two miles and a half long.

At Sydney Mines the collieries of the Nova Scotia Steel and Coal Company were operated; No. 1 colliery during part of the year and No. 3 during all the year. In July all the work was concentrated on No. 3, but No. 1 was, temporarily at least, closed down.

In Inverness county no very noteworthy new developments have taken place during last year. A bore-hole nearly 650 feet deep, has been put down in 1904 at St. Rose, near Chimney-Corner and it was expected that development work would follow, but all work has been discontinued for the present.

In Pictou county the Acadia Coal Company was pushing very actively the sinking of the Allan shaft, in the hope of reaching the main seam. The intention is to make this the main colliery of the company. It is reported that the seam was struck in October, at a depth of almost 1000 feet. It is the intention to extend the shaft to cut all the seams.

New Brunswick.—In New Brunswick, the Grand Lake district was producing as usual during the year. The railway line of the New Brunswick Coal and Railway Company, which taps the coal district, has just passed under the control of the Provincial Government, and it is expected that much will be done to encourage the coal industry of the Grand Lake district.

TABLE 14.

COAL.

NEW BRUNSWICK :—PRODUCTION.

Calendar Year.	Tons.	Value.	Value per ton.
1887	10,040	$ 23,607	$2 35
1888	5,730	11,050	1 93
1889	5,673	11,733	2 07
1890	7,110	13,850	1 95
1891	5,422	11,030	2 03
1892	6,768	9,375	1 39
1893	6,200	9,837	1 59
1894	6,469	10,264	1 59
1895	9,500	14,250	1 50
1896	7,500	11,250	1 50
1897	6,000	9,000	1 50
1898	6,160	9,240	1 50
1899	10,528	15,792	1 50
1900	10,000	15,000	1 50
1901	17,630	51,857	2 94
1902	18,795	39,680	2 11
1903	16,000	40,000	2 50
1904	9,112	18,224	2 00
1905	29,400	58,800	2 00

Saskatchewan and Alberta.—In the Estevan district, in the south-east corner of the province of Saskatchewan, the Souris Coal Mining Company has built a new tipple 140 feet long, 35 feet high, near Coalfields. When the equipment is completed it is expected that the tipple will handle 1,000 tons per day of 10 hours. The company has laid out the town site of Taylortown in the vicinity of the mine. This company is also operating, under lease, the C.P.R. colliery at Bienfait, about three miles north-east of Coalfields. The Hudson Bay Company is boring extensively in the vicinity on its own land, but the logs of these boreholes are not available.

Along the Crow's Nest line of the C.P.R., in Southern Alberta, there has been great activity in coal mining during the past year. Several new collieries have been opened and new coal areas are being developed. In the following brief-mention of these, a geographical order will be observed from east to west along the Crow's Nest line.

At Taber, which is 32 miles east of Lethbridge, several coal mining companies are now operating, although the work done so far has been almost altogether of the nature of development. The two largest mines are those of the Taber Coal Mining Company, which controls 9,000 acres, and the Reliance Coal Company, with about 1,500 acres. There are other small mines which supply local wants. Eight analyses of this Taber coal gave the following range of composition: Moisture, 10 to 12 p.c.; volatile, combustible matter, 26 to 31 p.c.; fixed carbon, 46 to 51 p.c.; ash, 7 to 16 p.c.; specific gravity, 1·31 to 1·41 p.c.

In Lethbridge the Alberta Railway and Irrigation Company's mine has been producing very steadily. The workings are being extended to the neighbourhood of the valley of the Bow river, the bed of which is only about 40 feet above them and it is their intention to work out a large section underlying the valley. A very interesting piece of work is now being accomplished at the mine. The old workings, through which all the haulage and hoisting will be done, will be separated from the new underground section by a coal barrier of 200 feet, which will be pierced in only two places. These two tunnels will be lined with masonary and concrete and in each will be installed a system of sluice gates which can be worked from the surface, so that in case of an invasion of water from the Bow river, the old workings could be saved.

At Lundbreck, 39 miles west of McLeod, the Breckenridge and Lund Coal Company is doing a good deal of development work. They are sinking a shaft which was nearly 300 feet deep in September. The plant is at present solely for development but the permanent machinery is ordered and it is expected that the mine will be on a shipping footing before the close of the year.

At Frank, The Canadian American Coal and Coke Company was working the Gebo mine. The seam is here overhanging and is inclined at an angle of 82 degrees. It is worked up the pitch altogether.

The West Canadian Colliery Company has built a new tipple and screening plant at their No. 1 mine, about 4 miles north of Frank and 1 mile south of the old plant at Lille. All the coal is now taken out by the No. 1 tipple, and the screenings are sent to the coking plant at

Lille, where a washer was being built in September. This washer is designed for a capacity of 300 tons per 24 hours, and it is expected that washing the coal will greatly reduce the ash contents of the coke, which at present is rather high. The same company is operating the Bellevue Colliery, which is on the main line of the Crows Nest branch, about 3 miles east of Frank. The extreme work done here has been mainly with a a view to development.

The International Coal and Coke Company at Coleman has worked steadily. The company has only been in operation two years, but it has a very up-to-date plant and an output of 900 tons a day. With little addition the plant could handle 1,500 tons.

On the main line of the C.P.R. the Pacific Coal Company has done a great deal of work during the year at their Bankhead colliery, near Banff, Alberta. The coal here is an anthracite admirably suited for domestic purposes. The company has just erected a breaker, a screening and loading plant which will at first handle 1,000 tons a day; this output could on short notice be increased to 2,000 tons. The plant which was not quite completed in September, besides the breaker and screening plant, comprised well equipped and extensive work-shops, power house, etc. When in working order the mine will produce all sizes of domestic coal, egg, stove, pea, etc., and the screenings will be briquetted.

At Canmore, four miles from Banff, the McNeil Coal Company has erected a new tipple and a picking plant; they are putting in a Howe washer to wash all coal under $\frac{1}{2}$ inch in size. The washing plant will have a capacity of 400 tons in ten hours, and is expected to be in running order before the end of the year.

At Anthracite the mine has been completely abandoned, for the present at least, and the greater part of the surface plant removed to the Canmore Colliery.

In the district around Edmonton, several small mines were worked, as in the past, from the banks of the Saskatchewan river. Preparations were being made for greatly increasing the output of several collieries, to keep pace with the demand created by the growth and development of the country.

TABLE 15.

COAL.

NORTH-WEST TERRITORIES :—PRODUCTION.

Calendar Year.	Tons.	Value.	Value per ton.
1887	74,152	$ 157,577	$ 2 13
1888	115,124	183,354	1 59
1889	97,364	179,640	1 85
1890	128,953	198,498	1 54
1891	174,131	437,243	2 51
1892	184,370	469,930	2 55
1893	238,395	598,745	2 51
1894	199,991	488,980	2 45
1895	185,654	414,064	2 23
1896	225,868	606,891	2 69
1897	267,163	667,908	2 50
1898	340,088	825,220	2 43
1899	334,600	811,500	2 43
1900	351,950	839,375	2 38
1901	391,139	1,008,917	2 58
1902	478,129	1,110,521	2 32
1903	614,445	1,316,743	2 14
1904	786,617	1,591,545	2 02
1905	1,046,513	2,167,249	2 07

British Columbia.—In the Crow's Nest field, in British Columbia, the Crow's Nest Pass Coal Company is doing most of its work at Coal Creek and at Michel; there is comparatively little work done at Carbonado, on Morrissey Creek. At the Coal Creek colliery a new steel tipple, 724 feet long, and a screening plant are being erected to handle the coal from all the mines on both sides of the valley. The tipple is designed to handle an output of 4,000 tons in ten hours. At the Michel colliery, 24 miles north of Fernie, a new haulage system by compressed air locomotives is being put in. The tipple of the Michel colliery can handle 2,000 tons in ten hours.

In the Nanaimo district the Western Fuel Company are hoisting from No. 1 shaft at Nanaimo and from the Northfield or Departure shaft. At this last colliery they have just completed a modern tipple and vessel-loading plant. A strike which lasted from May to October, during which time the collieries were closed down, will rather lower the figure of production for the year

The Wellington Colliery Company worked their extension colliery all the year. Dr. H. S. Poole has been charged by the Geological Survey to study the coal fields of Vancouver Island during the past summer, and in the Summary Report of the director will be found a short account of his investigations, both in the Nanaimo and in the Comox fields.

TABLE 16.

COAL.

BRITISH COLUMBIA :—PRODUCTION.

Calendar Year.	Output Tons, 2,240 lbs.	Home Consumption, Tons, 2,240 lbs.	Sold for Export, Tons. 2,240 lbs. ‡ ‡	PRODUCTION.*		Price per ton, 2,240 lbs.	Value.
				Tons. 2,240 lbs.	Tons, 2,000 lbs.		
						$	$
1836-52..	10,000	From 1836 to 1873 inclusive, the output is taken as production.			11,200	4 00	40,000
1852-59..	25,398				28,446	4 00	101,592
1859¶...	1,989				2,228	4 00	7,956
1860.....	14,247				15,957	4 00	56,988
1861.....	13,774				15,427	4 00	55,096
1862.....	18,118				20,292	4 00	72,472
1863.....	21,345				23,906	4 00	85,380
1864.....	28,632				32,068	4 00	114,528
1865.....	32,819				36,757	4 00	131,276
1866....	25,115				28,129	4 00	100,460
1867. ..	31,239				34,988	4 00	124,956
1868.....	44,005				49,286	4 00	176,020
1869.....	35,802				40,098	4 00	143,208
1870.....	29,843				33,424	4 00	119,372
1871-2-3.	148,459				166,274	4 00	593,836
1874.....	81,547	25,023	56,038	81,061	90,788	3 00	243,183
1875.....	110,145	31,252	66,392	97,644	109,361	3 00	292,932
1876.....	139,192	17,856	†122,329	140,185	157,007	3 00	420,555
1877.....	154,052	24,311	115,381	139,692	156,455	3 00	419,076
1878.. ..	170,846	26,166	164,682	190,848	213,750	3 00	572,544
1879.....	241,301	40,294	192,096	232,390	260,277	3 00	697,170
1880. ...	267,595	46,513	225,849	272,362	305,045	3 00	817.086
1881.....	228,357	40,191	189,323	229,514	257,056	3 00	688,542
1882.....	282,139	56,161	232,411	288,572	323,201	3 00	865,716
1883.....	213,299	64,786	149,567	214,353	240,075	3 00	643,059
1884. ...	394,070	87,388	306,478	393,866	441,130	3 00	1,181,598
1885.....	365,596	95,227	237,797	333,024	372,987	3 00	999,072
1886.....	326,636	85,987	249,205	335,192	375,415	3 00	1,005,576
1887....	413,360	99,216	334,839	434,055	486,142	3 00	1,302,165
1888.....	489,301	115,953	365,714	481,667	539,467	3 00	1,445,001
1889.....	579,830	124,574	443,675	568,249	636,439	3 00	1,704,747
1890.....	678,140	177,075	508,270	685,345	767,586	3 00	2,056,035
1891.....	1,029,097	202,697	806,479	1,009,176	1,130,277	3 00	3,027,528
1892	826,335	196,223	640,579	836,802	937,218	3 00	2,510,406
1893.....	978,294	207,851	768,917	976,768	1,093,980	3 00	2,930,304
1894.....	1,012,953	165,776	827,642	993,418	1,112,628	3 00	2,980,254
1895.....	939,654	188,349	756,334	944,683	1,058,045	3 00	2,834,049
1896.....	894,882	261,984	634,238	896,222	1,003,769	3 00	2,688,666
1897.....	892,296	290,310	619,860	910,170	1,019,390	3 00	2,730,510
1898.....	1,136,485	375,423	752,863	1,128,286	1,263,680	3 00	3,384,858
1899.....	1,306,324	526,058	751,711	1,277,769	1,431,101	3 00	3,833,307
1900. ...	1,590,178	685,667	914,184	1,599,851	1,791,833	3 00	4,799,553
1901.....	1,691,557	799,666	914,163	1,713,829	1,919,488	3 00	5,141,487
1902.....	1,641,626	837,871	776,809	1,614,680	1,808,441	3 00	4,844,040
1903.....	1,450,663	947,499	549,449	1,496,948	1,676,581	3 00	4,490,844
1904.....	1,685,698	1,129,465	533,593	1,663,058	1,862,625	3 00	4,989,174
1905.....	1,736,696	1,089,667	647,343	1,737,010	1,945,452	3 00	5,211,030

*This production is obtained by adding 'Home Consumption' and 'Sold for Export,'

†52,935 of this amount was exported as sales without the division into the "Home Consumption' and 'Sold for Export.'

‡The figures in the 'Sold for Export' column do not agree as they should with those given in Table 5, the only explanation being that the data in the two cases are from different sources, and it has not been possible to find out the cause of the difference.

¶Two months only.

Sales and output for year. Tons of 2240 lbs.	Tons.	Cwt.	Tons.	Cwt.
Sold for consumption in Canada	513,313			
" export to U.S.A.	647,343			
" " to other countries				
Total sales			1,160,656	
Used in making coke	398,896			
Used under colliery boilers, &c	177,458			
Total for colliery use			576,354	
			1,737,010	
Stock on hand first of year	3,528			
" " last of year	3,214			
Difference taken from stock during the year			314	
Output of collieries for year			1,736,696	

NUMBER OF HANDS EMPLOYED, DAILY WAGES PAID, &c.

Character of Labour.	Underground. No. of employees	Underground. Average daily wage	Above ground. No. of employees	Above ground. Average daily wage	Total. No. of employees	Total. Average daily wage
Supervision and clerical assistance	83	$ 7 62	57	$ 4 50	140	$ 6 06
Whites--						
Miners	1,445	4 70			1,445	4 70
Miners' helpers	507	2 25			507	2 25
Labourers	624	2 75	368	2 60	992	2 67
Mechanics and skilled lab.	75	2 87	311	3 60	386	3 23
Boys	140	1 50	53	1 40	193	1 45
Japanese	102	1 37	18	1 22	120	1 24
Chinese	151	1 37	473	1 60	624	1 48
Totals	3,127		1,280		4,407	

COKE.

The total production of coke for 1905, to which contributed the three provinces of Nova Scotia, British Columbia and Alberta, shows a marked increase over 1904. From 554,083 tons in 1904 it attained 700,488 tons in 1905. Each of the three provinces have a larger production than in the previous year, but Nova Scotia and Alberta are mainly responsible for the greater tonnage.

TABLE 1.

COKE.

ANNUAL PRODUCTION.

Calendar Year.	Tons.	Value.	Value. per Ton.
1886	35,396	$101,940	$2.88
1887	40,428	135,951	3.36
1888	45,373	134,181	2.96
1889	54,539	155,043	2.84
1890	56,450	166,298	2.95
1891	57,084	175,592	3.08
1892	56,135	160,249	2.85
1893	61,078	161,790	2.65
1894	58,044	148,551	2.56
1895	53,356	143,047	2.68
1896	49,619	110,257	2.22
1897	60,686	176,457	2.91
1898	87,600	286,000	3.26
1899	100,820	350,022	3.47
1900	157,134	649,140	4.13
1901	365,531	1,228,225	3.36
1902	502,043	1,519,185	3.03
1903	561,318	1,734,404	3.09
1904	554,083	2,032,048	3.66
1905	700,488	2,436,211	3.48

The total increase in tonnage is therefore 146,405 over 1904, which is divided up as follows among the contributing provinces: Nova Scotia an increase of 110,439 tons, Alberta 23,882 tons and British Columbia 12,884 tons.

TABLE 2.

COKE.

PRODUCTION OF COKE BY PROVINCES.

Calendar Year.	Nova Scotia.		British Columbia.		Alberta.	
	Tons.	Value.	Tons.	Value.	Tons.	Value.
		$		$		$
1897	41,532	90,950	19,154	85,507	.....	...
1898	48,400	111,000	39,200	175,000	.... ..	
1899	62,459	178,767	38,361	171,255	....	...
1900	61,767	223,395	95,367	425,745		..
1901	222,694	590,560	142,837	637,665	... .	
1902	363,330	899,930	138,713	619,255	....	
1903	371,745	888,094	189,573	846,310	... .	
1904	275,927	805,022	257,172	1,148,090	20,984	78,936
1905	386,366	1,054,712	269,256	1,202,035	44,866	179,464

Nova Scotia.—The coke production of Nova Scotia is practically all used in the manufacture of iron and steel in the province itself. The total production this year shows a marked increase, for which the new coking plant of the Nova Scotia Steel and Coal Company is to be partly credited. Almost 90 per cent of the Nova Scotian coke is manufactured in by-product ovens. The two largest coking plants in the province are the plant of the Dominion Iron and Steel Co., at Sydney, which consists of 10 batteries of 50 ovens each, or 500 ovens, of the Otto-Hoffman by-product type, and the plant of the Nova Scotia Steel and Coal Co., at Sydney Mines, which comprises 120 ovens of the Bernard type, and 30 Bauer ovens.

Alberta.—This province is becoming quite a factor in the production of coke. In 1904 only 20,197 tons were produced, whereas in 1905 this figure had more than doubled, having reached 44,866 tons. This is manufactured altogether from the coal of the Blairmore-Frank field, in the Crow's Nest field, on the Crow's Nest branch of the C.P.R.

The West Canadian Collieries, Limited, have a battery of 50 ovens of the Bernard type, at Lille. These are the only mechanical or by-product ovens in the west. They are of the same pattern as those recently erected (4 batteries of 30 ovens each) for the Nova Scotia Steel and Coal Company at Sydney Mines, Nova Scotia. All the other ovens in operation in the province are of the bee-hive pattern. The production of coke of Alberta is entirely consumed in Canada, mainly in the smelting centres of British Columbia.

British Columbia.—There is only a very small increase, of slightly over 12,000 tons, to record this year in the production of coke in British Columbia. In 1904, the total production amounted to 257,172 tons, whereas in 1905 this was raised to 269,266 tons. Of this quantity about 45 per cent is used locally, in the lead and copper smelters of the province, and the balance of 55 per cent is exported to the United States. All the coke ovens of British Columbia, on the mainland as well as on Vancouver Island, are of bee-hive pattern.

Below are given statistical tables of the imports and exports of coke.

TABLE 3.
COKE.
EXPORTS OF COKE.

Calendar Year.	Tons.	Value.
		$
1897	2,987	6,078
1898	3,774	8,394
1899	5,557	18,726
1900	41,529	131,278
1901	57,505	176,990
1902	62,568	180,920
1903	32,608	135,957
1904	102,463	345,031
1905	116,071	509,908

TABLE 4.
COKE.
IMPORTS OF OVEN COKE.

Fiscal Year.	Tons.	Value.	Fiscal Year.	Tons.	Value.
		$			$
1880	3,837	19,353	1893	41,821	156,277
1881	5,492	26,123	1894	42,864	176,996
1882	8,157	36,670	1895	43,235	149,434
1883	8,943	38,588	1896	61,612	203,826
1884	11,207	44,518	1897	83,330	267,540
1885	11,564	41,391	1898	135,060	347,040
1886	11,858	39,756	1899	141,284	362,826
1887	15,110	56,222	1900	187,878	506,839
1888	25,487	102,334	1901	308,786	680,138
1889	29,557	91,902	1902	267,142	842,815
1890	36,564	133,344	1903	256,723	1,222,756
1891	38,533	177,605	1904	221,050	765,123
1892	43,499	194,429	1905 Duty free.	371,593	807,842

The exports are altogether from British Columbia to the United States, and the larger proportion of these exports are to the smelting centres, immediately south of the 49th parallel. The largest item in the imports consists of the fuel supply of the various blast furnaces of Ontario.

CHROMITE.

Good progress has been made in the mining and treatment of chromite ores in the Eastern Townships of the Province of Quebec, the only district in Canada from which these ores are at present obtained. The total shipments in 1905 were approximately 8,575 tons valued at $93,301 as compared with 6,074 tons in 1904 and 3,509 tons in 1903.

Considerable improvements have been made in the methods of mining and concentrating the ores. The treatment is the same throughout the district. The ore is sorted as it comes from the pit and all running over 40 per cent sesquioxide of chromium is graded crude No. 1 (over 47 per cent.) and No. 2 (between 40 per cent. and 47 per cent.) The waste or ore running less than 40 per cent. $Cr_2 O_3$ is sent to the mills for concentration. Here it is crushed in jaw crushers and under stamps and concentrated in Wilfley tables. Two grades of concentrates are produced and are finding a ready market chiefly in the United States. The high grade concentrates running 50 to 54 per cent. $Cr_2 O_3$ are competing successfully with the high grade ores of New Caledonia.

The largest operating company during the year was the Black Lake Chrome and Asbestus Company. This company remodelled its plant during the year. A mill building containing a 30 stamp mill was erected on the line of the Quebec Central Railway near Black Lake. A tram line operated by cable was built connecting the two shafts at No. 1 pit with the mill and an air compressor installed at the pit. All of this plant is operated by electric power obtained from the St. Francis Hydraulic Company,

Small shipments were also made by the American Chrome Company and the Canadian Chrome Company.

Statistics of production and exports are given in the following tables :—

TABLE 1.

CHROMITE.

ANNUAL PRODUCTION.

Calendar Year.	Tons. (2,000 lbs.)	Average price per ton.	Value.
		$ cts	$
1886	* 60	15 75	945
1887	38	15 00	570
1888 to 1893	no output		
1894	1,000	20 00	20,000
1895	3,177	13 00	41,300
1896	2,342	11 53	27,004
1897	2,637	12 31	32,474
1898	*2,021	12 00	24,252
1899	2,010	10 86	21,842
1900	2,335	11 56	27,000
1901	1,274	13 14	16,744
1902	900	14 44	13,000
1903	3,509	14 57	51,129
1904	6,074	11 05	67,146
1905	8,575	10 88	93,301

* Railway shipments.

TABLE 2.

CHROMITE.

EXPORTS.

Calendar Year.	Tons.	Value.
1895	*2,908	$ 42,236
1896	2,466	31,411
1897	2,106	26,254
1898	1,683	20,783
1899	1,509	19,876
1900	368	8,259
1901	2,259	25,444
1902	740	7,535
1903	1,013	20,524
1904	3,338	60,336
1905	5,042	45,072

GRAPHITE.

With the exception of a small amount mined near Havelock, N.B., for use in paint-making the graphite production in Canada in 1905 was all obtained from the Black Donald mine, Brougham tp., Renfrew county, and a mine in North Elmsley tp., Lanark county, Ont., operated by the Globe Refining Company of Ottawa. The total quantity of ore mined during the year was 2,138 tons of which 1,694 tons were milled; 444 tons of ore were sold crude, valued at $8,160 while 97 tons of milled products were disposed of, valued at $8,575 the total sales being 541 tons valued at $16,735.

No information was received of any operations in the graphite deposits at Buckingham or at Grenville, Que.

Statistics of production, exports and imports are given in Tables 1, 2, and 3 following.

TABLE 1.
GRAPHITE.
ANNUAL PRODUCTION.

Calendar Year.	Tons.	Value.	Calendar Year.	Tons.	Value.
1886	500	$4,000	1896	139	9,455
1887	300	2,400	1897	436	16,240
1888	150	1,200	1898	.....	13,698
1889	242	3,160	1899	1,130	24,179
1890	175	5,200	1900	1,922	31,040
1891	260	1,560	1901	2,210	38,780
1892	167	3,763	1902	1,095	28,300
1893	nil.	nil.	1903	728	23,745
1894*	3	223	1904	452	11,760
1895	220	$ 6,150	1905	541	16,735

* Exports.

TABLE 2.
GRAPHITE.
EXPORTS.

Calendar Year.	Value.	Calendar Year.	Value.
1886	$ 3,586	1896	$ 9,480
1887	3,017	1897	4,325
1888	1,080	1898	13,098
1889	538	1899	22,490
1890	1,529	1900	46,197
1891	72	1901	35,102
1892	3,952	1902	24,839
1893	38	1903	43,642
1894	223	1904	16,567
1895	4,833		

		Cwt.	
1905	Crude	5,088	$ 7,596
	Manufactures of		518
			$ 8,114

TABLE 3.

GRAPHITE.

IMPORTS OF RAW AND MANUFACTURED GRAPHITE.

Fiscal Year.	Plumbago.	Manufactures of plumbago.	
		Black-lead.	Other Manufactures.
1880	$1,677	$18,055	$2,738
1881	2,479	26,544	1,202
1882	1,028	25,132	2,181
1883	3,147	21,151	2,141
1884	2,891	24,002	2,152
1885	3.729	24,487	2,805
1886	5,522	23,211	1,408
1887	4,020	25,766	2,830
1888	3,802	7,824	22,604
1889	3,546	11,852	21,789
1890	3,441	10,276	26,605
1891	7,217	8,292	26,201
1892	2,988	13,560	23,085
1893	3,293	16,595	23,051
1894	2,177	17,614	16,686
1895	2,586	13,922	21,988
1896	2,865	18,434	19,497
1897	1,406	17,863	20,674
1898	1,862	19,638	32,653
1899	4,979	21,334	36,490
1900	4,437	22,078	38,440
1901	2,357	25,646	49,890
1902	3,649	20,467	43,656
1903	2,870	22,559	47,117
1904	1,802	26,053	41,510
	Duty.		
1905 — Plumbago, not ground, &c.	10 p.c.	$2,499	
1905 — Black-lead	25 "		$30,743
1905 — Plumbago, ground and manufactures of N.E.S.	25 "		$13,192
1905 — Crucibles, clay or plumbago	Free.		31,353
Totals, 1905		$2,499	$30,743	$44,545

GYPSUM.

The total sales of crude, ground and calcined gypsum in 1905 amounted to 442,158 short tons, valued at $586,168, compared with 345,961 tons valued at $373,474, an increase of $96,197 tons or nearly 28 per cent in quantity and $211,694 or over 56 per cent in value.

The total quantity of gypsum mined during the year was 443,569 short tons of which 26,855 tons were calcined, making Plaster of Paris, hard wall plaster, etc.

The sales of gypsum products for the year in detail, were as follows:—

	Tons.	Value.
Crude gypsum	412,155	$409,146
Ground gypsum	3,255	8,779
Plaster of Paris, wall plaster, etc	26,748	168,243
	442,158	$586,168

Statistics of production, exports and imports are given in the following tables.

TABLE 1.

GYPSUM.

ANNUAL PRODUCTION.

Calendar Year.	Tons.	Value.	Average price per ton.
1886	162,000	$178,742	$ 1.10
1887	154,008	157,277	1.02
1888	175,887	179,393	1.01
1889	213,273	205,108	0.96
1890	226,509	194,033	0.86
1891	203,605	206,251	1.01
1892	241,048	241,127	1.00
1893	192,568	196,150	1.02
1894	223,631	202,031	0.90
1895	226,178	202,608	0.89
1896	207,032	178,061	0.86
1897	239,691	244,531	1.02
1898	219,256	232,515	1.06
1899	244,566	257,329	1.05
1900	252,101	259,009	1.02
1901	293,799	340,148	1.16
1902	333,599	379,479	1.14
1903	314,489	388,459	1.24
1904	345,961	373,474	1.08
1905 Crude gypsum	412,155	409,146	0·99
1905 Ground gypsum	3,255	8,779	2·70
1905 Plaster of Paris and wall plaster	26,748	168,243	6·29
Total	442,158	586,168	1·32

TABLE 2.

GYPSUM.

ANNUAL PRODUCTION BY PROVINCES.

CALENDAR YEAR.	NOVA SCOTIA.		NEW BRUNSWICK.		ONTARIO.		MANITOBA.	
	Tons.	Value.	Tons.	Value.	Tons.	Value.	Tons.	Value.
		$		$		$		$
1887	116,346	116,346	29,102	29,216	8,560	11,715		
1888	124,818	120,429	44,369	48,764	6,700	10,200		
1889	165,025	142,850	40,866	49,130	7,382	13,128		
1890	181,285	154,972	39,024	30,986	6,200	8,075		
1891	161,934	153,955	36,011	33,996	5,660	18,300		
1892	197,019	170,021	39,709	65,707	4,320	5,399		
1893	152,754	144,111	36,916	41,846	2,898	10,193		
1894	168,300	147,644	52,962	48,200	2,369	6,187		
1895	156,809	133,929	66,949	63,839	2,420	4,840		
1896	136,590	111,251	67,137	59,024	3,305	7,786		
1897	155,572	121,754	82,658	118,116	1,461	4,661		
1898	132,086	106,610	86,083	121,704	1,087	4,201		
1899	126,754	102,055	116,792	151,296	1,020	3,978		
1900	138,712	108,828	112,294	145,850	1,095	4,331		
1901	170,100	136,947	121,595	189,709	1,504	5,692	600	7,800
1902	206,087	181,425	124,041	170,153	1,917	7,699	1,554	20,202
1903	189,427	173,881	119,182	172,080	2,720	21,988	3,160	20,510
1904	218,580	153,600	120,991	187,524	2,390	18,350	4,000	14,000
1905	272,252	298,248	163,553	232,586	1,853	23,834	4,500	31,500

TABLE 3.

GYPSUM.

EXPORTS OF CRUDE GYPSUM.

Calendar Year.	NOVA SCOTIA.		NEW BRUNSWICK.		ONTARIO.		TOTAL.	
	Tons.	Value.	Tons.	Value.	Tons.	Value.	Tons.	Value.
		$		$		$		$
1874	67,830	68,164	.....	.....	.....	.....	67,830	68,164
1875	86,065	86,193	5,420	5,420	.....	.....	91,485	91,613
1876	87,720	87,590	4,925	6,616	120	180	92,765	94,386
1877	106,950	93,867	5,030	5,030	.....	.....	111,980	98,897
1878	88,631	76,695	16,335	16,435	489	675	105,455	93,805
1879	95,623	71,353	8,791	8,791	579	720	104,993	80,864
1880	125,685	111,833	10,375	10,987	875	1,240	136,935	124,060
1881	110,303	100,284	10,310	15,025	657	1,040	121,270	116,349
1882	133,426	121,070	15,597	24,581	1,249	1,946	150,272	147,597
1883	145,448	132,834	20,242	35,557	462	837	166,152	169,228
1884	107,653	100,446	21,800	32,751	688	1,254	130,141	134,451
1885	81,887	77,898	15,140	27,730	525	787	97,552	106,415
1886	118,985	114,116	23,498	40,559	350	538	142,833	155,213
1887	112,557	106,910	19,942	39,295	225	337	132,724	146,542
1888	124,818	120,429	20	50	670	910	125,508	121,389
1889	146,204	142,850	31,495	50,862	483	692	178,182	194,404
1890	145,452	139,707	30,034	52,291	205	256	175,691	192,254
1891	143,770	140,438	27,536	41,350	5	7	171,311	181,795
1892	162,372	157,463	27,488	43,623	.....	.....	189,860	201,086
1893	132,131	122,556	30,061	36,706	.....	.....	162,192	159,262
1894	119,569	111,586	40,843	46,538	.....	.....	160,412	158,124
1895	133,369	125,651	56,117	67,593	.....	.....	189,486	193,244
1896	116,331	109,054	64,946	77,535	.....	.....	181,277	186,589
1897	122,984	116,665	66,222	80,485	.....	.....	189,206	197,150
1898	99,215	93,474	70,399	81,433	.....	.....	169,614	174,907
1899	104,795	99,984	96,831	108,094	*½	12	201,626	208,090
1900	.....	.....	.....	.....	.....	.....	188,262	201,912
1901	.....	.....	.....	.....	.....	.....	236,247	231,594
1902	.....	.....	.....	.....	.....	.....	289,600	295,215
1903	.....	.....	.....	.....	.....	.....	287,496	311,580
1904	.....	.....	.....	.....	.....	.....	298,211	316,436
1905	.....	.....	.....	.....	.....	.....	359,246	388,474

*Exported from British Columbia.

TABLE 4.

GYPSUM.

EXPORTS OF GROUND GYPSUM.

Calendar Year.	Nova Scotia.	New Brunswick.	Ontario.	Total.
	$	$	$	$
1890				105
1891				588
1892				20,255
1893				22,132
1894	2,124	17,930		20,054
1895	3,364	18,827	42	22,233
1896	1,270	19,246	751	21,267
1897	1,655	5,024	84	6,763
1898	1,548	4,900		6,448
1899	205	7,898	20	8,123
1900				19,834
1901				15,337
1902				5,101
1903				12,457
1904				2,333
1905				2,673

TABLE 5.

GYPSUM.

IMPORTS OF GYPSUM, ETC.

Fiscal Year.	Crude Gypsum.		Ground Gypsum.		Plaster of Paris.	
	Tons.	Value.	Pounds.	Value.	Pounds.	Value.
1880	1,854	$3,203	1,606,578	$ 5,948	667,676	$ 2,376
1881	1,731	3,442	1,544,714	4,676	574,006	2,864
1882	2,132	3,761	759,460	2,576	751,147	4,184
1883	1,384	3,001	1,017,905	2,579	1,448,650	7,867
1884		3,416	687,432	1,936	782,920	5,226
1885	1,353	2,354	461,400	1,177	689,521	4,809
1886	1,870	2,429	224,119	675	820,273	5,463
1887	1,557	2,492	13,266	73	594,146	4,342
1888	1,236	2,193	106,068	558	942,338	6,662
1889	1,360	2,472	74,390	372	1,173,996	8,513
1890	1,050	1,928	434,400	2,136	693,435	6,004
1891	376	640	36,500	215	1,035,605	8,412
1892	626	1,182	310,250	2,149	1,166,200	5,595
1893	496	1,014	140,830	442	552,130	3,143
1894		1,660	23,270	198	422,700	2,386
1895	603	960	20,700	88	259,200	1,619
1896	1,045	848	64,500	198	297,000	2,000
1897		772	45,000	123	969,900	4,489
1898	1,147	1,742	35,700	293	329,600	2,025
1899	325	692	33,900	338	496,300	3,120
1900	77	958	6,300	69	849,100	6,492
1901	286	1,125	65,400	1,097	502,200	3,978
1902	541	1,697	56,700	249	475,300	2,641
1903	1,076	2,187	68,700	228	630,800	3,599
1904	249	663	106,800	559	625,100	2,885
1905	2,344	7,386	*2,255,700	2,681	7,924,100	37,643

*Equivalent to 7,519 barrels.

Crude gypsum, duty free. Ground gypsum, duty 15%. Plaster of Paris, duty 12½c. per 100 lbs.

MANGANESE.

Theré has been but little manganese mining in Canada during the past few years. During 1905, the dumps on the property of the Tenny Cape Manganese Co., at Tennycape, Nova Scotia, were worked over by tributers. No direct returns of production were received but exports were reported as 22 tons valued at $1,720 and this figure has been taken as representing the production.

TABLE 1.

MANGANESE.

ANNUAL PRODUCTION.

Calendar Year.	Tons.	Value.	Value per ton.
1886	1,789	$41,499	$23.20
1887	1,245	43,658	35.07
1888	1,801	47,944	26.62
1889	1,455	32,737	22.50
1890	1,328	32,550	24.51
1891	255	6,694	26.25
1892	115	10,250	89.13
1893	213	14,578	68.44
1894	74	4,180	56.49
1895	125	8,464	67.71
1896*	123½	3,975	32.19
1897*	15¼	1,166	76.46
1898	50	1,600	32.00
1899	1,581	20,004	12.65
1900	30	1,800	60.00
1901*	440	4,820	10.95
1902*	172	4,062	23.62
1903	91	2,775	30.49
1904	66	2,740	41.51
1905*	22	1,720	78.18

*Exports.

TABLE 2.

MANGANESE.

EXPORT OF MANGANESE ORE.

CALENDAR YEAR.	NOVA SCOTIA.		NEW BRUNSWICK.		TOTAL.	
	Tons.	Value.	Tons.	Value.	Tons.	Value.
1873			1,031	$20,192	1,031	$20,192
1874	6	$ 12	776	16,961	782	16,973
1875		200	194	5,314	203	5,514
1876	21	723	391	7,316	412	8,039
1877	106	3,699	785	12,210	891	15,909
1878	106	4,889	520	5,971	626	10,860
1879	154	7,420	1,732	20,016	1,886	27,436
1880	79	3,090	2,100	31,707	2,179	34,797
1881	200	18,022	1,504	22,532	1,704	40,554
1882	123	11,520	771	14,227	894	25,747
1883	313	8,635	1,013	16,708	1,326	25,343
1884	134	11,054	469	9,035	603	20,089
1885	77	5,054	1,607	29,595	1,684	34,649
1886	(a) 441	30,854	1,377	27,484	(a)1,818	58,338
1887	578	14,240	837	20,562	1,415	34,802
1888	87	5,759	1,094	16,073	1,181	21,832
1889	59	3,024	1,377	26,326	1,436	29,350
1890	177	2,583	1,729	34,248	1,906	36,831
1891	22	563	233	6,131	255	6,694
1892	84	6,180	59	2,025	143	8,205
1893	123	12,409	10	112	133	12,521
1894	11	720	45	2,400	56	3,120
1895	108	6,348	3/10	3	108 3/10	6,351
1896	123 1/2	3,975			123 1/2	3,975
1897	15 1/4	1,166			15 1/4	1,166
1898	11	325			11	325
1899	67	2,328	3	82	70	2,410
1900					34	1,720
1901					440	4,820
1902					172	4,062
1903					135	1,889
1904					123	2,706
1905					22	1,720

(a) 250 tons from Cornwallis should more correctly be classed under the heading of mineral pigments.

TABLE 3.

MANGANESE.

IMPORTS: OXIDE OF MANGANESE.

Fiscal Year.	Pounds.	Value.	Fiscal Year.	Pounds.	Value.
1884	3,989	$ 258	1895	64,151	$2,781
1885	36,778	1,794	1896	108,590	4,075
1886	44,967	1,753	1897	70,663	2,741
1887	59,655	2,933	1898	130,456	5,047
1888	65,014	3,022	1899	141,356	5,539
1889	52,241	2,182	1900	126,725	4,155
1890	67,452	3,192	1901	272,134	8,176
1891	92,087	3,743	1902	476,331	5,360
1892	76,097	3,530	1903	279,611	8,051
1893	94,116	3,696	1904	275,696	7,051
1894	101,863	4,522	1905 Duty free	235.289	6,832

MICA.

According to returns received, the production of mica in Canada in 1905, was as follows .—

	Value.
Quebec	$ 109,672
Ontario	68,563
	$ 178,235

The demand for mica has considerably improved and higher prices have been realized, while the smaller sizes, or mica cutting 1 x 2 inches, have found a ready market.

The greater part of the Canadian production is exported to the United States as shown in Table 3 though larger shipments are now being made to European markets.

Statistics of production and exports are shown in Tables 1 and 2.

TABLE 1.

MICA.

ANNUAL PRODUCTION.

Calendar Year.	Value.	Calendar Year.	Value.
1886	$ 29,008	1896	$60,000
1887	29,816	1897	76,000
1888	30,207	1898	118,375
1889	28,718	1899	163,000
1890	68,074	1900	166,000
1891	71,510	1901	160,000
1892	104,745	1902	135,904
1893	75,719	1903	177,857
1894	45,581	1904	160,777
1895	65,000	1905	178,235

TABLE 2.

MICA.

EXPORTS.

Calendar Year.	Value.	Calendar Year.	Value.
1887	$ 3,480	1897	$ 69,101
1888	23,563	1898	110,507
1889	30,597	1899	153,002
1890	22,468	1900	146,750
1891	37,590	1901	152,553
1892	86,562	1902	(a) 391,812
1893	70,081	1903	196,020
1894	38,971	1904	198,482
1895	48,525	1905	179,049
1896	47,756		

(a) Probably includes some material manufactured from mica.

TABLE 3.

MICA.

*IMPORTS OF MICA INTO THE UNITED STATES FROM CANADA, YEARS ENDING JUNE 30.

Fiscal Year.	Pounds.	Value.
1895	546,905	$ 39,637
1896	570,750	53,719
1897	404,080	53,399
1898	465,779	53,854
1899	1,024,098	131,310
1900	1,097,067	136,981
1901	967,904	161,741
1902	854,167	184,287
1903	834,035	196,456
1904	573,035	137,191
1905	506,917	121,560

* The Foreign Commerce and Navigation of the United States.

MINERAL PIGMENTS.

The production of ochres and barytes only are included under this heading.

Ochres.—The production of ochres in 1905 was 5,105 tons valued at $34,675 and was all derived from deposits near Three Rivers, Champlain county, Quebec. This output was not all used in the manufacture of paint, in fact the greater proportion is represented by crude iron oxide which is shipped to many cities in Canada and exported to the United States and used in the purification of gas.

The firms mining ochres are :—

Canada Paint Co., Montreal, Que.
Champlain Oxide Co., Three Rivers, Que.
Thos. H. Argall, Three Rivers, Que.
Ontario Mineral Paint Works, Campbellville, Ont.

TABLE 1.

MINERAL PIGMENTS.

ANNUAL PRODUCTION OF OCHRES.

Calendar Year.	Tons.	Value.
1886	350	$ 2,350
1887	485	3,733
1888	397	7,900
1889	794	15,280
1890	275	5,125
1891	900	17,750
1892	390	5,800
1893	1,070	17,710
1894	611	8,690
1895	1,339	14,600
1896	2,362	16,045
1897	3,905	23,560
1898	2,226	17,450
1899	3,919	20,000
1900	1,966	15,398
1901	2,233	16,735
1902	4,955	30,495
1903	6,266	32,760
1904	3,925	24,995
1905	5,105	34,675

TABLE 2.

MINERAL PIGMENTS.

IMPORTS OF OCHRES.

Fiscal Year.		Duty.	Pounds.	Value.
1880			571,454	$ 6,544
1881			677,115	8,972
1882			731,526	8,202
1883			898,376	10,375
1884			533,416	6,398
1885			1,119,177	12,782
1886			1,100,243	12,267
1887			1,460,128	17,067
1888			1,725,460	17,664
1889			1,342,783	12,994
1890			1,394,811	14,066
1891			1,528,696	20,550
1892			1,708,645	22,908
1893			1,968,645	23,134
1894			1,358,326	18,951
1895			793,258	12,048
1896			1,159,494	16,954
1897			1,504,044	18,504
1898			2,126,592	26,307
1899			2,444,698	31,092
1900			2,474,537	32,017
1901			2,092,067	27,267
1902			2,530,743	33,909
1903			3,215,346	42,243
1994			2,767,580	36,636
1905	Ochres and ochrey earths and raw siennas	20 p. c.	1,269,887	$ 14,097
	Oxides, dry fillers, fire-proofs, umbers and burnt siennas N.E.S.	25 "	1,852,803	21,790
	Total, 1905		3,122,690	$35,887

TABLE 3.

MINERAL PIGMENTS.

EXPORTS OF MINERAL PIGMENTS, IRON OXIDES, ETC.

Calendar Year.	Tons.	Value.
1897	512	$7,706
1898	283	4,227
1899	308	5,408
1900	651	7,154
1901	401	8,233
1902	352	6,182
1903	676	12,770
1904	416	7,260
1905	353	7,704

Barytes.—The production of barytes in 1905 was 3,360 tons valued at $7,500 and was all produced at Lake Ainslie in Cape Breton The product was shipped to New York and to Montreal.

The Ainslie Mining and Railway Company of Halifax with branches in New York and Montreal have begun the exploitation of the barytes deposits at East Lake Ainslie, C.B., on a much larger scale than has hitherto been attempted.

The Company's charter includes the right to build a railway north to Cheticamp and south to the Intercolonial. At present the ore is carried across the lake a distance of about eight miles in a boat especially constructed for the purpose and thence by way of the Inverness Railway & Coal Co's. line to Port Hastings. Considerable expenditure has already been made on necessary connecting railways, tramways, wharves, &c.

TABLE 4.

MINERAL PIGMENTS.

ANNUAL PRODUCTION OF BARYTES.

Calendar Year.	Tons.	Value.
1885	300	$ 1,500
1886	3,864	19,270
1887	400	2,400
1888	1,100	3,850
1889	.....	.....
1890	1,842	7,543
1891	.....	.....
1892	315	1,260
1893	.....	.....
1894	1,081	2,830
1895	.....	.....
1896	145	715
1897	571	3,060
1898	1,125	5,533
1899	720	4,402
1900	1,337	7,605
1901	653	3,842
1902	1,096	3,957
1903	1,163	3,931
1904	1,382	3,702
1905	3,360	7,500

TABLE 5.

MINERAL PIGMENTS.

IMPORTS OF BARYTES.

Fiscal Year.	Cwt.	Value.
1880	2,230	$ 1,525
1881	3,740	1,011
1882	497	303
1883		185
1884		229
1885	7	14
1886		62
1887	379	676
1888	236	214
1889	1,332	987
1890	1,322	978

TABLE 6.

MINERAL PIGMENTS.

MISCELLANEOUS IMPORTS, FISCAL YEAR, 1904.

		Duty.	Quantity.	Value.
				$
Paint, ground or mixed in, or with either japan, varnish, lacquers, liquid dryers, collodion, oil finish or oil varnish	Lbs.	25 p. c.		
Paints and colours, rough stuff and fillers, anti-corrosive and anti-fouling paints commonly used for ship hulls, N.E.S	"	25 "	4,498,576	248,928
Paris green, dry	"	10 "	80,765	13,779
Paints and colours ground in spirits, and all spirit varnishes and lacquers	Galls.	$1.12½ per gallon	902	2,594
Putty	Lbs.	20 p. c.	293,323	4,471
Total				269,772

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MINERAL WATERS.

As has been stated in previous reports the following figures of production of mineral waters must be taken more or less as approximations. At a number of places in Canada where mineral springs occur, the water is being used for drinking or bathing, many are also bottled and sold in considerable quantity. At several points hotels have been erected near springs, the waters of which have curative properties. No data are available of the quantities thus used locally. It is therefore very difficult to obtain returns which would enable accurate statistics of the industry to be compiled.

TABLE 1.

MINERAL WATERS.

ANNUAL PRODUCTION.

Calendar Year.	Gallons.	Value.	Calendar Year.	Gallons.	Value.
1888	124,850	$ 11,456	1897	749,691	$141,477
1889	424,600	37,360	1898	555,000	100,000
1890	561,165	66,031	1899		100,000
1891	427,485	54,268	1900		75,000
1892	640,380	75,348	1901		100,000
1893	725,096	108,347	1902		100,000
1894	767,460	110,040	1903		100,000
1895	739,382	126,048	1904		100,000
1896	706,372	111,736	1905		100,000

TABLE 2.

MINERAL WATERS.

IMPORTS.

Fiscal Year.	Value.	Fiscal Year.	Value.
1880	$41,797	1893	27,909
1881	55,763	1894	28,130
1882	57,953	1895	27,879
1883	49,546	1896	32,674
1884	48,613	1897	22,142
1885	55,864	1898	33,314
1886	47,006	1899	38,046
1887	52,989	1900	30,343
1888	54,891	1901	40,802
1889	66,331	1902	91,871
1890	71,521	1903	108,130
1891	15,721	1904	137,304
1892	17,913		

1905	Mineral waters, natural, not in bottle	Duty free	$	630
	Mineral and aerated waters	" 20 p.c.		161,160
	Total			$161,790

NATURAL GAS.

The total value of the natural gas sold in Canada in 1905 was $379,561 as compared with $328,376 in 1904. The greater part of this output is derived from the wells in Ontario, the balance at Medicine Hat, Alta. There were nearly 300 producing wells in Ontario during the year and about 11 in Medicine Hat. The main field in Ontario, Welland county, is still the largest producer, the chief operating company being the Provincial Natural Gas and Fuel Company. The most recently discovered field in the counties of Haldimand and Brant is furnishing an increasing amount of gas, and the largest operator in this district, the Dominion Natural Gas Co., Ltd., has been absorbing some of the smaller operators and looking for new markets in the adjacent towns. The number of new producing wells bored in Ontario during the year was about 53.

The Medicine Hat, Alberta, gas field is yearly increasing in importance, in so far as output is concerned. The municipality is now the owner of six producing wells, supplying gas for street lighting and for sale to householders and manufacturers. The Canadian Pacific Railway owns one well put down in the railway yard, the gas being used for lighting and heating. There are in addition several privately owned wells.

It is a somewhat difficult matter to arrive at a satisfactory valuation of the gas used at Medicine Hat. In the case of the municipal plant the receipts from gas sold furnish a basis of value, but the gas from the Canadian Pacific Railway and other wells is neither measured nor sold. An endeavour has therefore been made to find the value of the services displaced, such as coal, &c., and then with a very liberal allowance for increased efficiency given by the gas the total value of the gas utilized in Medicine Hat during 1905 has been placed at $33,000.

TABLE 1.
NATURAL GAS.
ANNUAL PRODUCTION.

Calendar Year.	Value.
1892	$ 150,000
1893	376,233
1894	313,754
1895	423,032
1896	276,301
1897	325,873
1898	322,123
1899	387,271
1900	417,094
1901	339,476
1902	195,992
1903	202,210
1904	328,376
1905	379,561

PETROLEUM.

A great deal of exploration and drilling in search of new oil fields has been carried on in 1905 in various parts of Canada, more especially in the provinces of Alberta, of British Columbia, of New Brunswick and on the Island of Manitoulin in Ontario. But apart from a small quantity obtained in New Brunswick in the vicinity of Memramcook the total Canadian production of oil has been derived from the several pools of southern Ontario.

The details of production for the past few years are as follows :—

Crude Oil.	1901.	1902.	1903.	1904.
	Bbls.	Bbls.	Bbls.	Bbls.
Received at refineries	508,677	443,333	410,280	455,074
Direct sales for industrial purposes	113,715	87,291	76,357	48,400
Total sales of crude oil.....	622,392	530,624	486,637	503,474
" in gallons.....	21,783,720	18,571,840	17,032,295	17,621,590

Production calculated on the basis of bounty paid by the Dominion Government of 1½c. per gallon.	1905.
Six months ending June 1905.	13,519,031 galls.
" " December 1905.	8,674,305 "
Total, 1905	22,193,336 galls.
	634,095 bbls.

TABLE 1.

PETROLEUM.

CANADIAN OILS AND NAPHTHA INSPECTED AND CORRESPONDING QUANTITIES OF CRUDE OIL.

Calendar Year.	Refined Oils Inspected.	Crude Equivalent Calculated.	Ratio of Crude to Refined.	Equivalent in Barrels of 35 Gallons	Average Price per Barrel of Crude.	Value of Crude Oil.
	Gallons.	Gallons.				
1881	6,457,270	12,914,540	100:50	368,987		
1882	6,135,782	13,635,071	100:45	389,573		
1883	7,447,648	16,550,328	100:45	472,866		
1884	7,993,995	19,984,987	100:40	571,000		
1885	8,225,882	20,564,705	100:40	587,563		
1886	7,768,006	20,442,121	100:38	584,061	$0 90	$525,655
1887	9,492,588	24,980,494	100:38	713,728	0 78	556,708
1888	9,246,176	24,332,042	100:38	695,203	1 02⅔	713,695
1889	9,472,476	24,664,144	100:38	704,690	0 92¾	653,600
1890	10,174,894	26,776,037	100:38	795,030	1 18	902,734
1891	10,065,463	26,435,430	100:38	755,298	1 33¾	1,010,211
1892	10,370,707	27,291,334	100:38	779,753	1 26¼	984,438
1893	10,618,804	27,944,221	100:38	798,406	1 09½	874,255
1894	11,027,082	29,018,637	100:38	829,104	1 00¾	835,322
1895	10,674,232	25,414,838	100:42	726,138	1 49⅔	1,036,738
1896	10,684,284	25,438,771	100:42	726,822	1 59	1,155,647
1897	10,434,878	24,844,995	100:42	709,857	1 42½	1,011,546
1898	11,148,348	26,543,685	100:42	758,391	1 40	1,061,747
1899	11,927,981	28,399,955	100:42	808,570	1 48⅔	1,202,020
1900	13,428,422	24,867,449	100:54	710,498	1 62	1,151,007

During the session of 1904 of the Dominion parliament, an act was introduced and passed providing for the payment of a bounty of one and a half cents per gallon on all crude petroleum produced from wells in Canada. The official figures of the bounty paid serve as exellent basis for calculating the production of crude oil, and they have been so adopted for the year 1905. For the previous years, between 1901 and 1904 the production is based on direct returns as indicated in the first column of the above tabulated statement. For the years previous to 1901 the production of crude oil was obtained from government inspection returns, by assuming a ratio of crude to refined, and the statistics of production on this basis will be found in Table 1. This method was open to objection, however, owing to the possible incorrectness of the ratio assumed.

There is a marked increase in 1905 over the production of 1904, for which the stimulus caused by the granting of the bounty is probably responsible. There has also been a much greater production from the Leamington field, Mersea township, Essex county, Ontario, where a new and very productive pool has been struck.

The following tables illustrate the petroleum industry of Canada, by giving the exports, imports, returns of inspection and other data.

TABLE 2.

PETROLEUM.

VALUE OF THE PRODUCTION OF CANADIAN OIL REFINERIES.

Calendar Year.	Value.	Calendar Year.	Value.
1887	$1,288,109	1897	1,672,429
1888	1,401,459	1898	1,825,265
1889	1,414,184	1899	1,490,870
1890	1,638,420	1900	1,620,705
1891	1,534,509	1901	1,251,373
1892	1,782,365	1902	1,222,641
1893	1,675,784	1903	1,302,104
1894	1,567,134	1904	975,840
1895	1,806,237	1905	(a) 1,815,525
1896	1,876,913		

(a) Derived from both Canadian and imported crude oils.

TABLE 3.

PETROLEUM.

TOTAL AMOUNT OF OIL INSPECTED, CANADIAN AND IMPORTED.

Fiscal Year	Canadian.	Imported.	Total.	Canadian.	Imported.
	Gallons.	Gallons.	Gallons.	Per cent.	Per cent.
1881	6,406,783	476,784	6,883,567	93·1	6·9
1882	5,910,747	1,351,412	7,262,159	81·4	18·6
1883	6,970,550	1,190,828	8,161,378	85·4	14·6
1884	7,656,001	1,142,575	8,798,586	87·0	13·0
1885	7,661,617	1,278,115	8,939,732	85·7	14·3
1886	8,149,472	1,327,616	9,477,088	86·0	14·0
1887	8,243,962	1,665,604	9,909,566	83·2	16·8
1888	9,545,895	1,821,342	11,367,237	84·0	16·0
1889	9,462,834	1,767,812	11,230,646	84·3	15·7
1890	10,121,210	2,020,742	12,141,952	83·4	16·6
1891	10,270,107	2,022,002	12,292,109	83·6	16·4
1892	10,238,426	2,429,445	12,667,871	80·8	19·2
1893	10,683,806	2,641,690	13,325,496	80·2	19·8
1894	10,824,270	5,633,222	16,457,492	65·8	34·2
1895	10,936,992	5,650,994	16,587,986	65·9	34·1
1896	10,533,951	5,807,991	16,341,942	64·5	35·5
1897	10,506,526	6,248,743	16,755,269	62·7	37·3
1898	10,796,847	6,880,734	17,677,581	61·1	38·9
1899	11,005,804	7,232,348	18,238,152	60·3	39·7
1900	13,014,713	*8,216,207	21,230,920	61·3	38·7
1901	12,674,977	*9,232,165	21,907,142	57·9	42·1
1902	10,494,874	*10,916,396	21,411,270	49·0	51·0
1903	8,615,892	*14,479,176	23,095,068	37·3	62·7
1904	7,292,113	*17,369,930	24,662,043	29·6	70·4
1905	17,520,035	*10,284,053	27,804,088	63·0	37·0

Item (*a*) Table 5.

TABLE 4.

PETROLEUM.

EXPORTS OF CRUDE AND REFINED PETROLEUM.

Calendar Year.	Crude Oil.		Refined Oil.		Total.	
	Gallons.	Value.	Gallons.	Value.	Gallons.	Value.
1881	.....	.....	.....	.....	501	$ 99
1882	.....	.....	.....	.....	1,119	286
1883	.....	.....	.....	.....	13,283	710
1884	.....	.....	.....	.....	1,098,090	30,168
1885	.....	.....	.....	.....	337,967	10,562
1886	.....	.....	.....	.....	241,716	9,855
1887	.....	.....	.....	.....	473,559	13,831
1888	.....	.....	.....	.....	196.602	74,542
1889	.....	.....	.....	.....	235,855	10,777
1890	.....	.....	.....	.....	420,492	18,154
1891	446,770	$ 18,471	585	$104	447,355	18,575
1892	310,387	12,945	1,146	100	311,533	13,045
1893	107,719	3,696	2,196	394	109,915	4,090
1894	53,985	2,773	5,297	513	59,282	3,286
1895	22,831	1,044	10,237	2,023	33,068	3,067
1896	601	101	7,489	999	8,090	1,100
1897	.....	.....	342	49	342	49
1898	96	4	12,735	3,001	12,831	3,005
1899	.....	.....	3,425	859	3,425	859
1900	40	2	8,559	2,394	8,599	2,396
1901	14,168	691	375	66	14,543	757
1902	400	40	626	146	1,026	186
1903	350	15	1,013	190	1,363	205
1904	4,207	213	2,126	470	6,333	683
1905	35	2	7,228	2,078	7,263	2,080

TABLE 5.

PETROLEUM.

IMPORTS OF PETROLEUM AND PRODUCTS OF.

Fiscal Year.			Gallons.	Value.
				$
1880			687,641	131,359
1881			1,437,475	262,168
1882			3,007,702	398,031
1883			3,086,316	358,546
1884			3,160,282	380,082
1885			3,767,441	415,195
1886			3,819,146	421,836
1887			4,290,003	467,003
1888			4,523,056	408,025
1889			4,650,274	484,462
1890			5,075,650	515,852
1891			5,071,386	498,330
1892			5,649,145	475,732
1893			6,002,141	446,389
1894			6,597,108	439,988
1895			7,577,674	525,372
1896			8,005,891	735,913
1897			8,415,302	697,169
1898			9,074,311	724,519
1899			10,394,208	763,303
1900			9,633,647	864,833
1901			11,082,822	982,640
1902			13,220,005	1,107,207
1903			18,799,312	1,643,371
1904			24,521,115	2,152,623
1905	Oils :—			
	Mineral :	Duty.	Gallons.	Value.
				$
	(*a*) Coal and kerosene, distilled, purified or refined, naphtha and petroleum, N.E.S.	2½c. p.gall.	10,284,053	943,207
	(*b*) Products of petroleum	2½c. "	879,438	96,629
	(*c*) Crude petroleum, gas oils (other than benzine and gasoline)	1½c. "	72,533	3,771
	Petroleum crude, fuel and gas oils (8233 specific gravity) free	Free.	22,440,856	897,642
	(*d*) Illuminating oils composed wholly or in part of the products of petroleum, coal, shale or lignite, costing more than 30 cents per gallon	20 p. c.	10,232	2,593
	(*e*) Lubricating oils composed wholly or in part of petroleum, costing less than 25 cents per gallon	2½c. p.gall.	1,609,220	207,672
	Total		35,296,332	2,151,514

TABLE 6.*

PETROLEUM.

IMPORTS OF CRUDE AND MANUFACTURED OILS, OTHER THAN ILLUMINATING.

Fiscal Year.	Gallons.	Fiscal Year.	Gallons.
1881	960,691	1894	1,860,829
1882	1,656,290	1895	1,106,993
1883	1,895,488	1896	1,079,965
1884	2,017,707	1897	802,286
1885	2,489,326	1898	1,047,026
1886	2,491,530	1899	1,017,278
1887	2,624,399	1900	1,406,700
1888	2,701,714	1901	1,838,966
1889	2,882,462	1902	2,296,353
1890	3,054,908	1903	4,316,010
1891	3,049,384	1904	7,141,109
1892	3,047,199	1905	25,002,047
1893	1,481,749		

* The figures for the years from 1881 to 1894, inclusive, represent the total imports of petroleum and products, less the quantity of imported illuminating oils, inspected by the Inland Revenue Department. For 1895 and subsequent years, the Table is composed of items (*b*), (*c*) and (*e*) of Table 5.

TABLE 7.

PETROLEUM.

IMPORTS OF PARAFFINE WAX.

Fiscal Year.	Pounds.	Value.
1883	43,716	$ 5,166
1884	39,010	6,079
1885	59,967	8,123
1886	62,035	7,953
1887	61,132	6,796
1888	53,862	4,930
1889	63,229	5,250
1890	239,229	15,844
1891	753,854	50,275
1892	733,873	48,776
1893	452,916	38,935
1894	208,099	15,704
1895	163,817	11,579
1896	150,287	10,042
1897	138,703	7,945
1898	103,570	5,987
1899	92,242	4,025
1900	47,400	3,529
1901	118,845	9,639
1902	225,885	12,750
1903	592,642	28,674
1904	418,967	18,440
1905 (Duty, 25 p. c.)	81,992	7,795

TABLE S.

PETROLEUM.

IMPORTS OF PARAFFINE WAX CANDLES.

Fiscal Year.	Pounds.	Value.	Fiscal Year.	Pounds.	Value.
1880	10,445	$2,269	1894	10,818	$1,685
1881	7,494	1,683	1895	19,448	2,541
1882	5,818	1,428	1896	25,787	4,072
1883	7,149	1,734	1897	25,114	2,929
1884	8,755	2,229	1898	60,802	4,427
1885	9,247	2,449	1899	62,331	5,856
1886	12,242	2,587	1900	27,663	3,671
1887	21,364	3,611	1901	44,562	3,588
1888	22,054	2,829	1902	51,120	5,752
1889	8,038	1,337	1903	83,377	9,025
1890	7,233	1,186	1904	83,471	9,078
1891	10,598	2,116	1905. (Duty, 25 p.c.)	137,353	15,293
1892	9,259	1,952			
1893	8,351	1,735			

PHOSPHATE.

The production of Phosphate (Apatite) in 1905 is estimated at about 1,300 tons valued at $8,425. With the exception of a small quantity from Ontario this is nearly all obtained from the Mica mines north of Ottawa and is all used at Buckingham.

Statistics of production and exports are given in Tables 1 and 2.

TABLE 1.

PHOSPHATE.

ANNUAL PRODUCTION.

Calendar Year.	Tons.	Average Value per ton.	Value.
1886	20,495	$14.85	$304,338
1887	23,690	13.50	319,815
1888	22,485	10.77	242,285
1889	30,988	10.21	316,662
1890	31,753	11.37	361,045
1891	23,588	10.24	241,603
1892	11,932	13.20	157,424
1893	8,198	8.65	70,942
1894	6,861	6.00	41,166
1895	1,822	5.25	9,565
1896	570	6.00	3,420
1897	908	4.39	3,984
1898	733	5.00	3,665
1899	3,000	6.00	18,000
1900	1,415	5.02	7,105
1901	1,033	6.07	6,280
1902	856	5.79	4,953
1903	1,329	6.18	8,214
1904	817	5.62	4,590
1905	1,300	6.48	8,425

TABLE 2.

PHOSPHATE.

EXPORTS.

Calendar Year.	Ontario.		Quebec.		Totals.	
	Tons.	*Value.	Tons.	*Value.	Tons.	*Value.
1878	824	$12,278	9,919	$195,831	10,743	$208,109
1879	1,842	20,565	6,604	101,470	8,446	122,035
1880	1,387	14,422	11,673	175,664	13,060	190,086
1881	2,471	36,117	9,497	182,339	11,968	218,456
1882	568	6,338	16,585	302,019	17,153	308,357
1883	50	500	19,666	427,168	19,716	427,668
1884	763	8,890	20,946	415,350	21,709	424,240
1885	434	5,962	28,535	490,331	28,969	496,293
1886	644	5,816	19,796	337,191	20,460	343,007
1887	705	8,277	22,447	424,940	23,152	433,217
1888	2,643	30,247	16,133	268,362	18,776	298,609
1889	3,547	38,833	26,440	355,935	29,987	394,768
1890	1,866	21,329	26,591	478,040	28,457	499,369
1891	1,551	16,646	15,720	368,015	17,271	384,661
1892	1,501	12,544	9,981	141,221	11,482	153,765
1893	1,990	11,550	5,748	56,402	7,738	67,952
1894	1,980	10,560	3,470	29,610	5,450	40,170
1895			250	2,500	250	2,500
1896	1	5	299	2,990	300	2,995
1897	70	450	165	400	235	850
1898	21	240	702	8,000	723	8,240
1899	215	1,850	93	1,725	308	3,575
1900					Nil	Nil
1901					6	120
1902					70	1,880
1903					1	20
1904					191	5,348
1905					40	1,253

*These values do not compare with those in Table 1 above; the spot value is adopted for the production whilst the exports are valued upon quite a different basis.

PYRITES.

The production of pyrites in 1905 reached a total of 33,339 tons, valued at $125,486, as compared with 37,180 tons, valued at $134,033 in 1904. Of the total output all but a small percentage was the product of the Eustis Mining Co. and of the Nichols Chemical Company at Eustis and Capelton, near Sherbrooke, in the Eastern Townships, province of Quebec.

In Ontario two companies were mining and shipping pyrites from Madoc and Queensboro', in Hastings county, the American Madoc Mining Company and the British American Development Company, and the total output was valued at $21,470.

The exports of pyrites during 1905 were, according to Custom Returns, 19,755 tons, valued at $55,767.

Statistics of the production of pyrites and of the imports of brimstone and sulphur are given in Tables 1 and 2.

TABLE 1.

PYRITES.

ANNUAL PRODUCTION.

Calendar Year.	Tons. 2,000 lbs.	Value.
		$
1886	42,906	193,077
1887	38,043	171,194
1888	63,479	285,656
1889	72,225	307,292
1890	49,227	123,067
1891	67,731	203,193
1892	59,770	179,310
1893	58,542	175,626
1894	40,527	121,581
1895	34,198	102,594
1896	33,715	101,155
1897	38,910	116,730
1898	32,218	128,872
1899	27,687	110,748
1900	40,031	155,164
1901	35,261	130,544
1902	35,616	138,939
1903	33,982	127,713
1904	37,180	134,033
1905	33,339	125,486

TABLE 2.

PYRITES.

IMPORTS :—BRIMSTONE AND CRUDE SULPHUR.

Fiscal Year.	Pounds.	Value.
		$
1880	1,775,489	27,401
1881	2,118,720	33,956
1882	2,375,821	40,329
1883	2,336,085	36,737
1884	2,195,735	37,463
1885	2,248,986	35,043
1886	2,922,043	43,651
1887	3,103,644	38,750
1888	2,048,812	25,318
1889	2,427,510	34,006
1890	4,440,799	44,276
1891	3,601,748	46,351
1892	4,769,759	67,095
1893	6,381,203	77,216
1894	5,845,463	61,558
1895	4,900,225	56,965
1896	6,934,190	63,973
1897	8,672,751	87,719
1898	38,026,798	373,786
1899	24,517,026	265,799
1900	21,128,656	215,433
1901	23,856,651	270,608
1902	24,640,735	325,307
1903	24,412,737	259,123
1904	19,364,730	204,663
1905*	23,435,140	242,251

*Brimstone, crude, or in roll or flour, and sulphur in roll or flour. Duty free.

SALT.

The production and sales of salt in Canada in 1905 reached a total, according to direct returns from operators, of about 67,340 tons valued at $320,858 while stock in hand on Dec. 31, 1905 amounted to about 5,206 tons. The value of the packages used was $113,004. The number of men employed was about 191 and the total wages paid $83,391. This output is derived altogether from the province of Ontario, from the deposits in the counties of Essex, Lambton, Middlesex, Huron and Bruce. Large quantities of salt exist in the underlying formations of that part of the country at depths varying from 975 feet to 1,400 feet and the industry is practically only limited by the demand.

In 1896 a few tons of salt were produced at the south end of Lake Winnipegosis, Manitoba, but the industry has not been followed up in this district. Small quantities of brine have occasionally been evaporated at Plumweseep, New Brunswick, and sold locally along the line of the Intercolonial Railway and it is reported that preparations are being made to renew production at this place.

The exports of salt, which are of small amount, are shown in Table 2. Tables 3 and 4 show the quantities and values of the salt imported. The value of salt imported on which duty is levied has ranged from $20,000 to $80,000 a year, the value in 1905 being $58,056.

Salt imported from the United Kingdom or any British possession or imported for the use of the sea or gulf fisheries is free of duty, and a large portion of the trade of Eastern Canada is supplied with salt imported under this class. The quantity imported, duty free, in 1905 was 98,453 tons valued at $340,954.

Following is a list of the chief producers of salt in Ontario :—

The Canadian Salt Co., Ltd., E. G. Henderson, vice-President..Windsor.
Saginaw Lumber and Salt Co.....San Iwich.
Mooretown Salt Co., Ltd.....Mooretown.
Carter & Kittermaster ..... "
Sarnia Salt Co., Ltd.....Sarnia.
Sarnia Bay Mills Co..... "
Empire Salt Co..... "
Elarton Salt Works Co., Ltd., C. V. Morris.....Warwick.
Parkhill Salt Co., A. K. Hodgins.....Exeter.
Exeter Salt Works Co., J. B. Carling, Secy ..... "
Hensall Salt Works Co., Geo. McEwen, Secy.....Hensall.
Lake Huron and Manitoba Milling Co., Ltd., P. A. McGaw, Secy.....Goderich.
R. & J. Ransford.....Clinton.
Operating the following plants—
Coleman Salt Works..... Seaforth.
Stapleton Salt Works..... Clinton.
North American Chemical Co.....Goderich.
Goderich Salt Works..... "
Brussels Salt Works.....Brussels.
Clinton Salt Works, John McGarva.....Clinton.
Maitland Salt Works, John S. Platt.....Goderich.
The Grey, Young & Sparling Co. of Ont., Ltd., F. G. Sparling..Wingham.
The Ontario People's Salt & Soda Co., Ltd., John Tolmie, Secy.Kincardine.

TABLE 1.
SALT.
ANNUAL PRODUCTION.

Calendar Year.	Tons.	Value.
1886	62,359	$227,195
1887	60,173	166,394
1888	59,070	185,460
1889	32,832	129,547
1890	43,754	198,857
1891	45,021	161,179
1892	45,486	162,041
1893	62,324	195,926
1894	57,199	170,687
1895	52,376	160,455
1896	43,960	169,693
1897	51,348	225,730
1898	57,142	248,639
1899	59,339	254,390
1900	62,055	279,458
1901	59,428	262,328
1902	64,456	292,581
1903	62,452	297,517
1904	69,477	321,778
1905	67,340	320,858

TABLE 2.
SALT.
EXPORTS.

Calendar Year.	Bushels.	Value.
1880	467,641	$46,211
1881	343,208	44,627
1882	181,758	18,350
1883	199,733	19,492
1884	167,029	15,291
1885	246,794	18,756
1886	224,943	16,886
1887	154,045	11,526
1888	15,251	3,987
1889	8,557	2,390
1890	6,605	1,667
1891	5,290	1,277
1892	2,000	504
1893	4,940	1,267
1894	4,639	1,120
1895	4,865	959
1896	3,842	899
1897	5,383	1,193
1898	5,202	1,252
1899	11,205	2,773
1900	37,653	8,997
1901	39,224	6,510
1902	9,331	3,798
	Pounds.	
1903	1,915,648	5,927
1904	1,006,036	4,186
1905	1,447,728	6,112

TABLE 3.

SALT.

IMPORTS: SALT PAYING DUTY.

Fiscal Year.	Pounds.	Value.	Fiscal Year.	Pounds.	Value.
1880	726,640	$ 3,916	1893	21,377,339	79,838
1881	2,588,465	6,355	1894	15,867,825	53,336
1882	3,679,415	12,318	1895	8,498,404	29,881
1883	12,136,968	36,223	1896	7,665,257	24,550
1884	12,770,950	38,949	1897	11,911,766	33,470
1885	10,397,761	31,726	1898	11,068,785	32,792
1886	12,266,021	39,181	1899	11,781,453	32,839
1887	10,413,258	35,670	1900	11,028,337	30,180
1888	10,509,799	32,136	1901	11,625,688	34,087
1889	11,190,088	38,968	1902	13,892,849	39,605
1890	15,135,109	57,549	1903	14,554,693	41,785
1891	15,140,827	79,311	1904	29,779,183	73,826
1892	18,648,191	65,963			

		Duty.		
1905	Salt, coarse, N.E.S	5c. per 100 lbs.	12,320,072	$30,950
	Salt, fine, in bulk	5c. "	1,743,200	5,328
	Salt, N.E.S., in bags, barrels or other packages	7½c. "	4,410,596	21,778
	Total		18,473,868	58,056

TABLE 4.

SALT.

IMPORTS:—SALT NOT PAYING DUTY.

Fiscal Year.	Pounds.	Value	Fiscal Year.	Pounds.	Value.
1880	212,714,747	$400,167	1893	191,595,530	281,462
1881	231,640,610	488,278	1894	196,668,730	328,300
1882	166,183,962	311,489	1895	201,691,248	332,711
1883	246,747,113	386,144	1896	205,005,100	338,888
1884	225,390,121	321,243	1897	215,844,484	312,117
1885	171,571,209	255,719	1898	202,634,927	293,410
1886	180,205,949	255,359	1899	183,046,365	267,520
1887	203,042,332	285,455	1900	193,554,550	295,253
1888	184,166,986	220,975	1901	216,271,603	339,887
1889	180,847,800	253,039	1902	238,648,737	385,629
1890	158,490,075	252,291	1903	232,708,675	361,185
1891	195,491,410	321,239	1904	198,634,047	338,082
1892	201,831,217	314,995	1905*	196,907,500	340,954

*Salt imported from the United Kingdom, or any British possession, or imported for the use of the sea or gulf fisheries.

MISCELLANEOUS NON-METALLIC.

Arsenic.—Up to 1903 the main source of production of arsenic in Canada was the Deloro mine in Hastings county, province of Ontario. The arsenic was recovered in the process of treating auriferous mispickel. In 1902, however, the mine was closed and the mill continued to work on tailings and ore from the dump until 1903 when operations were abandoned. In 1904 and 1905 the arsenic production is represented by arsenical minerals contained in the ore shipped from the Cobalt district, Ontario. It cannot be definitely ascertained whether the arsenic is saved in the process of treating these ores, but it probably is.

TABLE 1.

MISCELLANEOUS—NON-METALLIC.

ANNUAL PRODUCTION OF ARSENIC.

Calendar Year.	Tons.	Value.
1885	440	$17,600
1886	120	5,460
1887	30	1,200
1888	30	1,200
1889	Nil.	Nil.
1890	25	1,500
1891	20	1,000
1892	Nil.	Nil.
1893	"	"
1894	7	420
1895	Nil.	Nil.
1896	"	"
1897	"	"
1898	"	"
1899	57	4,872
1900	303	22,725
1901	695	41,676
1902	800	48,000
1903	257	15,420
1904	(*a*) 72	903
1905	(*a*) 549	2,692

(*a*) Arsenic in ore, &c.

TABLE 2.

MISCELLANEOUS—NON-METALLIC.

IMPORTS OF ARSENIC.

Fiscal Year.	Pounds.	Value.	Fiscal Year.	Pounds.	Value.
1880	18,197	$ 576	1893	447,079	$12,907
1881	31,417	1,070	1894	292,505	10,018
1882	138,920	3,962	1895	1,115,697	31,932
1883	51,953	1,812	1896	664,854	27,523
1884	19,337	773	1897	152,275	8,378
1885	49,080	1,566	1898	291,967	14,270
1886	30,181	961	1899	582,383	24,203
1887	32,436	1,116	1900	230,730	11,035
1888	27,510	1,016	1901	159,263	8,361
1889	69,269	2,434	1902	106,857	6,004
1890	138,509	4,474	1903	298,375	11,824
1891	115,248	4,027	1904	414,065	12,421
1892	302,958	9,365	1905	Duty free. 268,274	7,661

TABLE 3.

MISCELLANEOUS—NON-METALLIC.

IMPORTS OF CHALK.

Fiscal Year.	Value.	Fiscal Year.	Value.
1880	$2,117	1893	$ 9,966
1881	2,768	1894	11,308
1882	2,882	1895	7,730
1883	5,067	1896	6,467
1884	2,589	1897	7,432
1885	8,003	1898	9,338
1886	6,583	1899	10,461
1887	5,635	1900	12,212
1888	5,865	1901	11,629
1889	5,336	1902	11,337
1890	7,221	1903	16,497
1891	8,193	1904	19,163
1892	9,558	1905*	20,896

* Chalk prepared. Duty, 20 p. c.

TABLE 4.

MISCELLANEOUS—NON-METALLIC.

IMPORTS OF WHITING.

Fiscal Year.	Cwt.	Value.	Fiscal Year.	Cwt.	Value.
1880	84,115	$26,092	1893	88,835	$25,563
1881	47,480	16,637	1894	103,633	26,649
1882	36,270	16,318	1895	102,751	25,441
1883	76,012	29,334	1896	113,791	27,322
1884	76,268	28,230	1897	102,453	22,541
1885	67,441	23,492	1898	166,293	25,761
1886	65,124	25,533	1899	134,884	34,310
1887	47,246	15,191	1900	127,455	34,575
1888	76,619	20,508	1901	209,868	60,878
1889	84,658	22,735	1902	153,982	42,136
1890	96,243	27,471	1903	139,804	39,867
1891	84,679	27,504	1904	186,919	42,507
1892	102,985	26,867	1905	198,485	51,215

*Whiting or whitening, gilder's whiting, and Paris white. Duty free

Feldspar.—The entire production of feldspar, in 1905, was derived from the province of Ontario and shipped to the United States. None of the operators in Quebec province reported any production.

The principal operators this year, were the Kingston Feldspar Mining Co., operating the Richardson Mine in Bedford township, Frontenac county, Ont., and Mr. Chas. Jenkins, of Petrolia, Ont., who is working another deposit on the south half of lot 3, con. III, of the same township.

TABLE 5.

MISCELLANEOUS—NON-METALLIC.

PRODUCTION OF FELDSPAR.

Calendar Year.	Tons.	Value.
1890	700	$3,500
1891	685	3,425
1892	175	525
1893	575	4,525
1894	Nil.	Nil.
1895	..	2,545
1896	972	*2,583
1897	1,400	3,290
1898	2,500	6,250
1899	3,000	6,000
1900	318	1,112
1901	5,350	10,700
1902	7,576	15,152
1903	13,928	18,966
1904	11,083	22,166
1905	11,700	23,400

* Exports.

Fire-clay.—The returns of fire-clay production are given in the following table. The output shown is practically all from Nova Scotia and British Columbia, and the greater proportion of this production during the past two years is to be credited to the Intercolonial Coal Co., of Westville, N.S., and the Wellington Colliery Company at Comox, Vancouver Island, B.C. In both provinces the fire-clay is mined in connexion with coal mining operations. There is a good demand for fire-clay throughout the western part of Canada and should a good deposit of this material be discovered within a reasonable distance of the railway, there would be a fair market for it.

TABLE 6.

MISCELLANEOUS—NON-METALLIC.

PRODUCTION OF FIRE-CLAY.

Calendar Year.	Tons.	Value.
1889	400	$4,800
1890	Nil.	Nil.
1891	250	750
1892	1,991	4,467
1893	540	700
1894	539	2,167
1895	1,329	3,492
1896	842	1,805
1897	2,118	5,759
1898	670	1,680
1899	599	1,295
1900	1,245	4,130
1901	3,979	5,920
1902	2,741	4,283
1093	2,639	3,523
1904	5,972	17,466
1905	5,088	13,917

TABLE 7.

MISCELLANEOUS—NON METALLIC.

PRODUCTION OF MOULDING SAND.

Calendar Year.	Tons.	Value.
1887	160	$ 800
1888	169	845
1889	170	850
1890	320	1,410
1891	230	1,000
1892	345	1,380
1893	4,370	9,086
1894	6,214	12,428
1895	6,765	13,530
1896	5,739	11,478
1897	5,485	10,931
1898	10,572	21.038
1899	13,724	27,430
1900	6,181	12,316
1901	14,705	29,410
1902	13,352	27,651
1903	3,658	7,256
1904	3,423	6,790
1905	*	*

*Returns incomplete.

TABLE 8.

MISCELLANEOUS—NON-METALLIC.

ANNUAL PRODUCTION OF QUARTZ.

Calendar Year.	Tons.	Value.
1890	200	$ 1,000
1891		
1892		
1893	100	500
1894		
1895		
1896	10	50
1897		
1898	284	570
1899	600	1,260
1900-1905		

TABLE 9

MISCELLANEOUS—NON METALLIC.

IMPORTS OF "SILEX"—CRYSTALLIZED QUARTZ.

Fiscal Year.	Cwt.	Value.
1880	5,252	$ 2,290
1881	3,251	1,659
1882	3,283	1,678
1883	3,543	2,058
1884	3,259	1,709
1885	3,527	1,443
1886	2,520	1,313
1887	14,533	5,073
1888	4,808	2,385
1889	5,130	1,211
1890	1,768	2,617
1891	3,674	1,929
1892	1,429	1,244
1893	2,447	1,301
1894	2,451	1,521
1895	2,882	1,881
1896	3,289	2,174
1897	2,564	3,415
1898	3,104	2,773
1899	3,951	2,595
1900	4,021	2,876
1901	3,562	2,106
1902	4,388	3,858
1903	3,514	2,762
1904	5,547	4,409
1905	Duty free. 8,931	4,475

TABLE 10.

MISCELLANEOUS—NON-METALLIC.

ANNUAL PRODUCTION OF SOAPSTONE AND TALC.

Calendar Year.	Tons.	Value.	Calendar Year.	Tons.	Value.
1886	50	$ 400	1896	410	1,230
1887	100	800	1897	157	350
1888	140	280	1898	405	1,000
1889	195	1,170	1899	450	1,960
1890	917	1,239	1900	1,420	6,365
1891	Nil	Nil	1901	259	842
1892	1,374	6,240	1902	689	1,804
1893	717	1,920	1903	990	2,739
1894	916	1,640	1904	840	1,875
1895	475	2,138	1905	500	1,800

STRUCTURAL MATERIALS.

These comprise building stone, granite, marbles, slate, flagstone, cements, lime, etc., as well as the manufactures of clay, such as bricks, tiles, drain pipe, earthenware and coarse pottery.

In the past it has been found difficult to obtain complete statistics of production. Many of these industries such as quarrying, brick-making, etc., are intermittent and are scattered over such a large area as Canada, that it has not been possible to obtain anything like full returns, so that a large proportion had to be estimated. The cement industry has been an important exception as very complete statistics of the manufacture of this product, have always been available. For 1905 an effort was made to obtain more complete statistics of brick production especially in districts where regular returns of output had not yet been obtained as in Manitoba, Saskatchewan, Alberta, British Columbia and the eastern maritime provinces. For the province of Ontario, it should be here explained, the Ontario Bureau of Mines has for a number of years obtained very complete statistics of production of clay products as well as of the other mineral output of the province and these figures as well as those for Quebec, published by the Dept. of Colonization, Mines and Fisheries, in the province of Quebec, have been utilized by the Mines Section of the Geol. Survey Dept. in estimating the total output of the Dominion. It is felt, however, that the time has arrived for the collection of more complete and uniform statistics of clay and stone products, for the whole of Canada and efforts in this direction will be continued.

Tables 1 to 12 following, show the annual production of stone, marble, granite, slate and flagstone, and the imports and exports of stone propucts.

The total aggregate value of the stone produced was over $2,000,000. The value of the stone exported was but $16,634, while the imports reached a total of $491,671.

TABLE 1.

STRUCTURAL MATERIALS.

ANNUAL PRODUCTION OF BUILDING STONE.

Calendar Year.	Value.
1886	$ 642,509
1887	552,267
1888	641,712
1889	913,691
1890	964,783
1891	708,736
1892	609,827
1893	1,100,000
1894	1,200,000
1895	1,095,000
1896	1,000,000
1897	1,000,000
1898	1,300,000
1899	1,500,000
1900	1,520,000
1901	1,650,000
1902	1,900,000
1903	1,975,000
1904	1,930,000
1905	1,830,000

TABLE 2.

STRUCTURAL MATERIALS.

EXPORTS OF STONE AND MARBLE, WROUGHT AND UNWROUGHT.

Calendar Year.	Wrought.	Unwrought.
1890	$21,725	$43,611
1891	13,398	46,162
1892	7,698	47,424
1893	9,102	12,532
1894	22,576	34,130
1895	8,587	51,616
1896	4,934	32,897
1897	9,415	42,034
1898	2,526	65,370
1899	5,092	101,931
1900	5,933	115,711
1901	5,917	157,739
1902	8,632	124,829
1903	7,684	46,295
1904	4,760	17,802
1905	3,545	13,089

TABLE 3.

STRUCTURAL MATERIALS.

IMPORTS OF BUILDING STONE.

Calendar Year	Value.	Calendar Year.	Value.
1880	$ 35,970	1893	$56,510
1881	58,149	1894	52,908
1882	33,623	1895	44,282
1883	35,061	1896	54,130
1884	51,088	1897	38,714
1885	30,491	1898	28,495
1886	41,675	1899	48,040
1887	54,368	1900	64,533
1888	86,373	1901	46,078
1889	100,314	1902	99,074
1890	132,155	1903	87,866
1891	170,890	1904	93,778
1892	95,550		

1905	Flagstones, granite and rough freestone, sandstone, and all building stone, not hammered or chiselled. Duty 15 p.c.	$49,004
	Granite and freestones, dressed; all other building stone dressed, except marble. Duty 20 p.c.	53,813
		$102,817

TABLE 4.

STRUCTURAL MATERIALS.

IMPORTS OF MANUFACTURES OF STONE OR GRANITE, N.E.S.

Fiscal Year.	Value.	Fiscal Year.	Value.
1880	$29,408	1893	$49,323
1881	36,877	1894	49,510
1882	37,267	1895	51,050
1883	45,636	1896	51,499
1884	45,290	1897	34,026
1885	39,867	1898	41,240
1886	41,984	1899	60,148
1887	41,829	1900	57,039
1888	47,487	1901	66,639
1889	61,341	1902	72,397
1890	84,396	1903	78,629
1891	61,051	1904	141,165
1892	39,479		

1905	Granite—Sawn only	Duty,	20 p.c.	$14,015
	" Finished and polished	"	35 p.c.	
	" Manufactures of N.O.P	"	35 p.c.	81,154
	Paving blocks	"	20 p.c.	32,319
	Manufactures of stone, N.O.P	"	30 p.c.	22,672
				$150,160

TABLE 5.

STRUCTURAL MATERIALS.

ANNUAL PRODUCTION OF MARBLE.

Calendar Year.	Tons.	Value.
1886	501	$9,900
1887	242	6,224
1888	191	3,100
1889	83	980
1890	780	10,776
1891	240	1,752
1892	340	3,600
1893	590	5,100
1894	Nil.	Nil.
1895	200	2,000
1896	224	2,405
1897 to 1905 inclusive	Nil.	Nil.

TABLE 6.

STRUCTURAL MATERIALS.

IMPORTS OF MARBLE.

Fiscal Year.		Duty.	Value.
1880			$ 63,015
1881			85,977
1882			109,505
1883			128,520
1884			108,771
1885			102,835
1886			117,752
1887			104,250
1888			94,681
1889			118,421
1890			99,353
1891			107,661
1892			106,268
1893			96,177
1894			94,657
1895			83,422
1896			90,065
1897			77,150
1898			95,894
1899			101,879
1900			94,017
1901			96,159
1902			130,424
1903			153,481
1904			181,511
1905	Marble and manufactures of :—		
	Marble sawn only	20	$89,306
	Finished and polished	35	.....
	Rough, not hammered or chiselled	15 %	4,141
	Manufactures of, N.O.P.	35	52,019
	Total, marble and manufactures of		$145,466

GRANITE.

Granite both for monumental and building purposes has been quarried in Nova Scotia, New Brunswick, Quebec and British Columbia during 1905. Fairly complete returns of output were received, the total value approximating $226,305.

In Nova Scotia the granite industry was confined during the year to the vicinities of Halifax and Middleton. Mr. John Kline, of Halifax, owns and operates the quarries at Witherod Lake, about $3\frac{1}{2}$ miles southwest of Halifax. This stone, a light grey granite, has been quarried for over twenty years and used extensively throughout Halifax in building operations including foundations, ornamental work, fences, pedestals for monuments, paving blocks, etc. The Nictaux granite at Middleton in Annapolis county is quarried by the same operator and used almost exclusively in monumental work. This stone is taken out intermittently as required and shipped in the rough to the cutting and polishing works at Witherod lake where all kinds of monumental work is undertaken. This granite has been shipped in the rough to Aberdeen, Scotland, and also to the polishing works at St. George, New Brunswick.

Quarries have also been opened at Shelbourne harbour in the southwestern part of Nova Scotia and the stone, light grey in color, has been used for paving blocks. The quarries are admirably situated for shipment.

At Whitehead in Guysborough county about 200 miles to the east of Halifax is found an area of pink granite. Though not yet worked, it is said that stone could be quarried and loaded directly to schooners at the water's edge. It has been proposed to quarry and ship this granite to London, England.

In New Brunswick granite quarrying has been an established industry for many years. The quarries are located at Hampstead, Queens county, (the Spoon island quarries), and at St. George, Charlotte county. Both these occurrences of granite have been described by Prof. Bailey in Part M., Vol. X of the Geological Reports.

The Spoon island quarries were worked during the year by Allan Appleby and Messrs. B. Mooney & Sons of St. John, N. B. The stone both light and dark gray is used extensively for monumental purposes and for this purpose is worth about $9 per ton f. o. b., at St. John. Much of it is now shipped to the polishing works at St. George. It is also employed in building construction and has been used in foundations, bridge piers and in buildings both public and private, in Fredericton and St. John.

The granites at St. George have been worked for many years and have attained considerable fame. They are especially distinguished on

account of their bright red colour and are employed principally for monumental and ornamental purposes. The rock is quarried in the valley of the Magaguadavic river a few miles above the town of St. George and is hauled by waggon to the polishing works in the village, of which there were six in operation in 1905. The operators of polishing works all quarry their own red stone and in addition purchase rough granite of other colours, gray, black, etc., from quarries at Hampstead, N. B., and from Nova Scotia, Quebec and Maine. The total value of finished granite shipped from St. George during 1905 was a little over $75,000. The industry is not now carried on quite so extensively as in former years, the falling off being ascribed in the first place to a public demand for other classes of granite and in the second place to the successful competition of Scotch granites due to low freight rates and the comparatively low wages paid to granite workers in Aberdeen, Scotland. The high duties on manufactured granite sent to the United States practically cut off that market.

The firms quarrying and manufacturing granite at St. George are:
Tayte Meating & Company.
Milne, Coutts & Company (Bay of Fundy Red Granite Works.)
Epps, Dodds & Company.
O'Brien & Baldwin.
McGrattan & Sons.

Messrs. Gilmour Bros. have also been quarrying a black granite about 12 miles from St. George for which there has been some considerable demand recently. The values of the red and gray granites in the rough at St. George are about $1 per cubic foot and the black granite from $1 to $2 per foot. About 3,500 tons were shipped from New Brunswick quarries during the year.

Granite is of wide occurrence and is quarried at a number of places in the province of Quebec. In the county of Argenteuil, township of Chatham, a rose pink granite is obtained at the Laurentian Granite Quarries owned by J. Brunet of Montreal. The quarry is provided with steam power, steam drills, etc., and five miles of railway are being built to connect with the Canadian Pacific Railway.

In the county of Iberville, Que., a dark grey granite in three grades of fine, medium and coarse is being quarried by the Mt. Johnson Quarries Co., at Mount Johnson.

Large quantities of granite have been quarried in the township of Stanstead, Stanstead county. A number of quarries have been opened in this township and a grey or greyish white granite of fine quality is shipped. This granite is said to be close in grain, easily cut, and very strong in resisting power. During 1905 quarries were operated by James Brodie, Graniteville, Samuel B. Norton, Stanstead Junction,

and the Stanstead Granite Quarries Co., L'd., the latter company also operating polishing works at Beebe Plain.

In the county of Compton, Whitton township, a grey granite has been quarried at St. Cecile de Whitton and St. Samuel and shipments were made in 1905 by the Whitton Granite Company at St. Victor de Tring.

Important quarries have been worked in Portneuf county at Riviere a Pierre on the Lake St. John Railway. At this point a quarry was opened up to a considerable extent and a large quantity of stone taken out for the piers of the Quebec bridge. The Riviere a Pierre granite is very compact with coarse crystals, of a greyish colour easily cut and possesses all the necessary qualities for heavy building work. It also takes a fine polish as may be seen in that which has been used for ornamental stone in buildings at Quebec. Quarries were operated at this locality in 1905 by Jean Voyer and Jos. Perron of Rivière à Pierre.

No statistics of granite production in Ontario in 1905 have been received. In former years, however, quarries have been worked extensively near Gananoque on islands in the St. Lawrence river. These are known as the Forsythe Quarries and furnish a stone ranging in texture from coarse to fine and of varying shades of red. The product has been largely used for building and paving. Another quarry was opened at Willetsholm, six miles west of Gananoque, the stone being a blue granite obtaining its unusual colour from the dark blue felspar crystals.

Stone is frequently taken out by railway companies at convenient points along their lines for bridge building and other purposes. A granite quarry has thus been operated by the Canadian Pacific Railway at Peninsula Harbour, and the Algoma Central Railway has also opened a quarry of fine red granite on the northeast quarter section 9, Tarentorus township, within 8 miles of Sault Ste. Marie.

In the eastern and northern parts of the province granite areas are of extensive occurrence which as the demand arises and transportation becomes available will no doubt yield stone suitable for all purposes.

In British Columbia granite has been quarried on the north arm of Burrard inlet, a few miles north of Vancouver, and on Nelson and Granite islands at the mouth of Jervis inlet about 60 miles north of Vancouver. The stone is light grey in colour and can be obtained in large blocks. The quarries are operated by the Vancouver Granite Company.

TABLE 7.

STRUCTURAL MATERIALS.

ANNUAL PRODUCTION OF GRANITE.

Calendar Year.	Tons.	Value.	Calendar Year.	Tons.	Value.
1886	6,062	$63,309	1896	18,717	106,709
1887	21,217	142,506	1897	10,345	61,934
1888	21,352	147,305	1898	23,897	81,073
1889	10,197	79,624	1899	13,418	90,542
1890	13,307	65,985	1900		80,000
1891	13,637	70,056	1901		155,000
1892	24,302	89,326	1902		210,000
1893	22,521	94,393	1903		200,000
1894	16,392	109,936	1904		150,000
1895	19,238	84,838	1905		226,305

SLATE AND FLAGSTONES.

The only slate quarries operated in Canada in recent years are those at New Rockland, Melbourne township, Richmond county, Quebec.

The production in 1905 was 4,975 squares valued at $21,568. The output has remained about the same for the past four years.

TABLE 8.

STRUCTURAL MATERIALS.

ANNUAL PRODUCTION OF SLATE.

Calendar Year.	Tons.	Value.
1886	5,345	$64,675
1887	7,357	89,000
1888	5,314	90,689
1889	6.935	119,160
1890	6,368	100,250
1891	5,000	65,000
1892	5.180	69,070
1893	7,112	90,825
1894		75,550
1895		58,900
1896		53,370
1897		42,800
1898		40,791
1899		33,406
1900		12,100
1901	715	9,980
1902		19,200
1903		22,040
1904		23,247
1905		21,568

TABLE 9.

STRUCTURAL MATERIALS.

EXPORTS OF SLATE.

Calendar Year.	Tons.	Value.
1884	539	$6,845
1885	346	5,274
1886	34	495
1887	27	373
1888	22	475
1889	26	3,303
1890	12	153
1891	15	195
1892	87	2,038
1893	178	3,168
1894	187	3,610
1895	36	574
1896	301	8,913
1897	Nil.	Nil.
1898	Nil.	Nil.
1899	Nil.	Nil.
1900	Nil.	Nil.
1901	16,750	10,000
1902 to 1905	Nil.	Nil.

TABLE 10.

STRUCTURAL MATERIALS.

IMPORTS OF SLATE.

Fiscal Year.	Value.	Fiscal Year.	Value.
1880	$21,431	1893	$51,179
1881	22,184	1894	29,267
1882	24,543	1895	19,471
1883	24,968	1896	24,176
1884	28,816	1897	21,615
1885	28,169	1898	24,907
1886	27,852	1899	33,100
1887	27,845	1900	53,707
1888	23,151	1901	72,187
1889	41,370	1902	72,601
1890	22,871	1903	84,437
1891	46,104	1904	86,057
1892	50,441		

		Duty.	
1905	Slate and manufactures of		
	Roofing slate	25% not over 75c per square	$45,345
	School writing slates	25%	19,811
	Slate pencils	25%	7,567
	Slate of all kinds and manufactures of, N.E.S.	30	20,505
	Total		$93,228

Flagstone.—A small quantity of flagstone is quarried each year at Bishop's crossing, township of Dudsville, Wolfe county, Quebec. Statistics of production are given below.

TABLE 11.

STRUCTURAL MATERIALS.

ANNUAL PRODUCTION OF FLAGSTONE.

Calendar Year.	Quantity, Sq. ft.	Value.
1886	70,000	$ 7,875
1887	116,000	11,600
1888	64,800	6,580
1889	14,000	1,400
1890	17,865	1,643
1891	27,300	2,721
1892	13,700	1,869
1893	40,500	3,487
1894	152,700	5,298
1895	80,005	6,687
1896		6,710
1897		7,190
1898		4,250
1899		7,600
1900		5,250
1901		4,575
1902	87,300	7,760
1903	79,200	6,688
1904	75.600	6,720
1905	81,000	7,650

TABLE 12.

STRUCTURAL MATERIALS.

IMPORTS OF FLAGSTONE.

Fiscal Year.	Tons.	Value.	Fiscal Year.	Tons.	Value.
1881	23	$ 241	1893	884	8,500
1882	90	848	1894	218	2,429
1883	10	99	1895	15	84
1884	137	1,158	1896	Nil.	Nil.
1885	205	1,756	1897	13	227
1886	1,602	9,443	1898	587	1,540
1887	1,316	10,966	1899	Nil.	Nil.
1888	2,642	21,077	1900	9	63
1889	1,669	15,451	1901	14	116
1890	5,665	48,995	1902	232	1,231
1891	3,770	36,348	1903 to 1905*		Nil.
1892	1,571	15,048			

* Flagstones dressed. Duty, 20 %. (See table 3).

CEMENT AND LIME.

The total sales of cement in 1905, both natural and Portland, amounted to 1,360,732 barrels, valued at $1,924,014, as compared with 967,172 barrels valued at $1,338,239 in 1904. The production of Portland cement has been increasing rapidly, while the output of natural rock cement has been as rapidly decreasing, and now forms but a small proportion of the whole.

Statistics of production since 1887 are given in Table 13 below.

TABLE 13.

STRUCTURAL MATERIALS.

ANNUAL PRODUCTION OF CEMENT.

Calendar Year.	Natural Rock Cement.		Portland Cement.		Total.	
	Barrels.	Value.	Barrels.	Value.	Barrels.	Value.
		$		$		$
1887					69,843	81,909
1888					50,668	35,593
1889					90,474	69,790
1890					102,216	92,405
1891					93,473	108,561
1892					117,408	147,663
1893					158,597	194,015
1894					108,142	144,637
1895					128,294	173,675
1896					149,090	201,651
1897	85,450	65,893	119,763	209,380	205,213	275,273
1898	87,125	73,412	163,084	324,168	250,209	397,580
1899	147,387	119,308	255,366	513,983	396,753	633,291
1900	125,428	99,994	292,124	562,916	417,552	662,910
1901	133,328	94,415	317,066	565,615	450,394	660,030
1902	127,931	98,932	594,594	1,028,618	722,525	1,127,550
1903	92,252	74,655	627,741	1,150,592	719,993	1,225,247
1904	56,814	50,247	910,358	1,287,992	967,172	1,338,239
1905	14,184	10,274	1,346,548	1,913,740	1,360,732	1,924,014

Natural rock cement was made by three firms in Ontario only, the plant formerly operated in Manitoba being idle during the year.

The quantity manufactured during the year was 14,184 barrels, and the same quantity was sold, valued at $10,274. Wages paid were $4,423 and 33 men were employed.

The prices realized at the works were 70 to 80c. per barrel of 240 lbs. net. Following is a list of firms owning plants :—

Hamilton Cement Works	Hamilton, Ont.
Queenston Cement Works	Queenston, Ont.
Battle's Thorold Cement Works	Thorold, Ont.
The Toronto Lime Co.	Toronto, Ont.
The Manitoba Union Mining Co., Ltd	Winnipeg, Man.

Portland cement was made by twelve companies, two in Quebec nine in Ontario, and one in British Columbia, and slag cement was made by one company in Nova Scotia. The increase in the sales of Portland cement in 1905 as compared with 1904 was 436,190 barrels and $625,748 in value, or about 48 per cent.

The total capacity of the thirteen plants in operation was about 8,000 barrels per day. A number of plants were operated for a portion of the year only while one plant in Ontario was idle during the whole year undergoing reconstruction.

Detailed statistics of production in 1904 and 1905 are as follows:

		1904.	1905.
Portland Cement sold	brls.	910,358	$1,346,548
" " manufactured	"	908,990	1,541,568
Stock on hand, Jan. 1	"	113,419	111,446
" " Dec. 31	"	112,051	306,466
Value of Cement sold	$	1,287,992	$1,913,740

The average price per barrel at the works in 1905 was $1.42, being only a fraction of a cent higher than the average price in 1904.

The imports of Portland cement into Canada in 1905 were:

	Quantity.	Value.
Six months ending June	cwt. 1,308,058	$493,730
" Dec.	" 1,903,395	644,818
Total	3,211,453	1,138,548

This is the equivalent to 917,558 barrels of 350 pounds each at an average price per barrel of $1.24. The duty is twelve and a half cents per hundred pounds.

The imports in 1904 were equivalent to 784,630 barrels of 350 pounds each valued at $1,061,056, or an average price per barrel of $1.35.

As there is very little cement exported from Canada, the consumption of this product in the country in 1905, would be approximately 1,346,548 barrels of home product and 917,558 barrels of imported, or a total of 2,264,106 barrels.

Following is an estimate of the consumption of Portland cement in Canada for the past eight years expressed in barrels of 350 lbs. net.

	Canadian	Imported	Total
	barrels.	barrels.	barrels.
1898	163,084	†306,588	469,672
1899	225,366	†371,550	626,916
1900	292,124	†371,817	663,941
1901	317,066	*555,900	872,966
1902	594,594	*544,954	1,139,548
1903	627,741	*773,678	1,401,419
1904	910,358	*784,630	1,694,988
1905	1,346,548	*917,558	2,264,106

†Fiscal year ending June 30th.
*Calendar year.

The exports and imports of Cement are shown in the following tables. In 1903 and previous years there was more imported cement used than Canadian product. In 1904 and 1905, however, the situation was changed and more Canadian cement was used than imported, the proportion of imported Portland cement used in 1905 being about 40 per cent of the total consumption.

TABLE 14.

STRUCTURAL MATERIALS.

EXPORTS OF CEMENT.

Calendar Year.	Value.
1891	$ 2,881
1892	938
1893	1,172
1894	482
1895	937
1896	1,328
1897	644
1898	2,117
1899	2,733
1900	3,296
1901	1,514
1902	2,267
1903	2,851
1904	5,494
1905	3,143

TABLE 15.

STRUCTURAL MATERIALS.

IMPORTS OF CEMENT IN BULK OR BAGS.

Fiscal Year.	Bushels.	Value.	Fiscal Year.	Bushels.	Value.
1880	65	$ 28	1893	12,534	$ 2,909
1881	579	298	1894	9,027	2,618
1882	386	86	1895		2,112
1883	1,759	548	1896		3,672
1884	4,626	1,236	1897		4,318
1885	4,598	1,315	1898		3,263
1886	6,808	1,851	1899		8,929
1887	5,421	1,419	1900		10,452
1888	23,919	5,787	1901		4,890
1889	32,818	10,668	1902		12,234
1890	21,055	5,443	1903		16,281
1891	11,281	2,890	1904		14,305
1892	14,351	3,394	1905*		18,489

*Cement, N.E.S., and manufactures of cement, Duty 20 per cent.

TABLE 16.

STRUCTURAL MATERIALS.

IMPORTS OF HYDRAULIC CEMENT.

Fiscal Year.	Barrels.	Value.
1880	10,034	$ 10,306
1881	7,812	7,821
1882	11,945	13,410
1883	11,659	13,755
1884	8,606	9,514
1885	5,613	5,396
1886	6,164	6,028
1887	6,160	8,784
1888	5,636	7,522
1889	5,835	7,467
1890	5,440	9,048
1891	3,515	6,152
1892	2,214	2,782
1893	4,896	8,060
1894	1,054	985
1895	5,333	7,001
1896	5,688	8,948
1897	2,494	3,937
	Cwt.	
1898	16,033	7,097
1899	1,678	694
1900	10,418	4,711
1901	17,784	6,865
1902	29,585	17,755
1903	13,690	6,333
1904	12,088	5.391
1905 (Cement hydraulic or waterlime)*	16,961	10,690

*Duty, 12½c. per 100 lbs.

TABLE 17.

STRUCTURAL MATERIALS.

IMPORTS OF PORTLAND CEMENT.

Fiscal Year.	Barrels.	Value.	Fiscal Year.	Barrels.	Value.
1880		$ 55,774	1894	224,150	$280,841
1881		45,646	1895	196,281	242,813
1882		66,579	1896	204.407	242,409
1883		102,537	1897	210,871	252,587
1884		102,857		Cwt.	
1885		111,521	1898	1,073,058	355,264
1886		120,398	1899	1,300,424	467,994
1887	102,750	148,054	1900	1,301,361	498,607
1888	122,402	177,158	1901	1,612,432	654,595
1889	122,273	179,406	1902	1,971,616	833,657
1890	192,322	313,572	1903	2,316,853	868,131
1891	183,728	304,648	1904	2,476,388	995,017
1892	187,233	281,553	1905 (Portland)*	3,228,394	1,234,649
1893	229,492	316,179			

* Duty, 12½c. per 100 lbs.

We give below a list of the companies engaged in the manufacture of Portland cement during 1905.

Sydney Cement Co., Sydney, C.B.
Crescent Cement Works, Longue Point, Que.
International Portland Cement Co., Toronto, Ont., and Hull, Que.
Canadian Portland Cement Co., Deseronto, Ont.
Lakefield Portland Cement Co., Lakefield, Ont.
Imperial Portland Cement Co., Owen Sound, Ont
Owen Sound Portland Cement Co., Ltd., Owen Sound, Ont.
Grey and Bruce Portland Cement Co., Ltd., Owen Sound, Ont.
Sun Portland Cement Co., Ltd., Owen Sound, Ont.
Hanover Portland Cement Co., Hanover, Ont.
National Portland Cement Co., Toronto and Durham, Ont.
Belleville Portland Cement Co., Belleville, Ont.
Ontario Portland Cement Co., Brantford, Ont.
Vancouver Portland Cement Co., Victoria, B.C.

Companies with works in process of erection, and companies proposing to erect plants :—

Colonial Portland Cement Co., Wiarton, Ont.
Raven Lake Portland Cement Co., Toronto and Victoria Road, O.
Superior Portland Cement Co., Orangeville, Ont.
Standard Portland Cement Co., Toronto, Ont.
Lehigh Portland Cement Co., Belleville, Ont.
Manitoba Portland Cement Co., Winnipeg, Man.
Alberta Portland Cement Co., Calgary, Alta.
Western Canada Coal and Cement Co., Exshaw, Alta.

In Nova Scotia a plant has been established by the Sydney Cement Co., at Sydney, for the manufacture of cement from blast furnace slag. This is the first plant of its kind to be established in Canada, although slag cement or Puzzolan cement (the latter name having been adopted in the United States) have been manufactured for some years both in the United States and in Europe.

TABLE 18.

STRUCTURAL MATERIALS.

PRODUCTION OF ROOFING CEMENT.

Calendar Year.	Tons.	Value.
1890	1,171	$ 6,502
1891	1,020	4,810
1892	800	12,000
1893	951	5,441
1894	815	3,978
1895		3,153
1896	86	430
1897 to 1905 inclusive	Nil.	Nil.

TABLE 19.

STRUCTURAL MATERIALS.

ANNUAL PRODUCTION OF LIME.

Calendar Year.	Value.	Calendar Year.	Value.
1886	$283,755	1896 estimated	650,000
1887	394,859	1897 "	650,000
1888	339,951	1898 "	650,000
1889	362,848	1899 "	800,000
1890	412,308	1900 "	800,000
1891	251,215	1901 "	830,000
1892	411,270	1902 "	892,000
1893 estimated	900,000	1903 "	900,000
1894 "	900,000	1904 "	780,000
1895 "	700,000	1905 "	750,000

TABLE 20.

STRUCTURAL MATERIALS.

EXPORTS OF LIME.

Calendar Year.	Value.
1891	$119,853
1892	121,535
1893	86,623
1894	83,670
1895	71,597
1896	70,820
1897	53,177
1898	49,594
1899	73,565
1900	80,852
1901	99,194
1902	116,009
1903	131,412
1904	73,838
1905	85,723

TABLE 21.

STRUCTURAL MATERIALS.

IMPORTS OF LIME.

Fiscal Year.	Barrels.	Value.
1880	6,100	$ 6,013
1881	5,796	4,177
1882	5,064	5,365
1883	7,623	9,224
1884	10,804	11,200
1885	12,072	11,503
1886	11,021	9,347
1887	10,835	8,524
1888	10,142	7,537
1889	13,079	9,363
1890	8,149	5,360
1891	6,259	4,273
1892	6,132	4,241
1893	6,879	4,917
1894	6,766	4,907
1895	12,008	5,743
1896	10,239	7,331
1897	16,108	10,529
1898	12,850	9,062
1899	15,720	11,124
1900	12,865	11,211
1901	19,657	14,534
1902	24,602	17,584
1903	31,108	22,470
1904	54,359	39,639
1905	Duty, 20 p.c. 98,676	71,588

BRICK AND CLAY PRODUCTS.

Statistics of the production of brick in Canada are given in Table 22. As already explained these have in the past been largely estimated, the figures for 1903, however, represent for the eastern and western provinces, direct returns and for Ontario and Quebec include the figures of brick production as published by the Mining Bureaus of these provinces. The figures of production for 1905, therefore, can safely be taken as underestimated although they are nearly a million dollars higher than the output published for 1904.

TABLE 22.

STRUCTURAL MATERIALS.

ANNUAL PRODUCTION OF BUILDING BRICKS.

Calendar Year.	Value.
1886	$ 873,600
1887	986,689
1888	1,036,746
1889	1,273,884
1890	1,266,982
1891	1,061,536
1892	1,251,934
1893	1,800,000
1894	1,800,000
1895	1,670,000
1896	1,600,000
1897	1,600,000
1898	1,900,000
1899	2,195,000
1900	2,275,000
1901	2,400,000
1902	2,593,000
1903	2,832,000
1904	2,983,000
1905	3,933,925

TABLE 23.

STRUCTURAL MATERIALS.

EXPORTS OF BRICKS.

Calendar Year.	M.	Value.
1891	246	$ 1,163
1892	1,963	12,192
1893	6,073	44,110
1894	1,095	7,405
1895	1,655	8,665
1896	983	5,678
1897	573	2,679
1898	65	442
1899	172	1,351
1900	546	4,528
1901	646	5,189
1902	2,110	12,786
1903	891	5,699
1904	696	5,357
1905	754	5,888

TABLE 24.

STRUCTURAL MATERIALS.

IMPORTS OF BUILDING BRICK.

Fiscal Year.	Value.
1880	$ 2,067
1881	4,281
1882	24,572
1883	14,234
1884	20,258
1885	14,632
1886	5,929
1887	2,440
1888	20,720
1889	24,585
1890	12,500
1891	9,744
1892	5,075
1893	14,108
1894	18,320
1895	4,705
1896	23,189
1897	10,336
1898	6,652
1899	21,306
1900	19,305
1901	20,677
1902	33,802
1903	28,493
1904	117,468
1905 ..... Duty, 20 p.c.	168,122

TABLE 25.
STRUCTURAL MATERIALS,
IMPORTS OF PAVING BRICK.*

Fiscal Year.	Value.
1898	$ 2,337
1899	23,648
1900	35,644
1901	10,414
1902	16,788
1903	18,811
1904	29,753
1905	32,578

*Duty 20 p.c.

TABLE 26.
STRUCTURAL MATERIALS.
PRODUCTION OF TERRA COTTA, &C.

Calendar Year.	Value.	Calendar Year.	Value.
1888	$ 49,800	1897	155.595
1889	Not available.	1898	167,902
1890	90,000	1899	220,258
1891	113,103	1900	259,450
1892	97,239	1901	278,671
1893	55,704	1902	276,241
1894	65,600	1903	405,796
1895	195,123	1904	(a)
1896	83,855	1905	(a)

(a) Included in Table 22.

TABLE 27.
STRUCTURAL MATERIALS.
PRODUCTION OF SEWER PIPES, &C.

Calendar Year.	Value.
1888	$266,320
1889	Not available.
1890	348,000
1891	227,300
1892	367,660
1893	350,000
1894	250,325
1895	257,045
1896	153,875
1897	164,250
1898	181,717
1899	161,546
1900	231,525
1901	248,115
1902	301,965
1903	317,970
1904	140,894
1905	382,000

TABLE 28.

STRUCTURAL MATERIALS.

IMPORTS OF DRAIN TILES AND SEWER PIPES.

Fiscal Year.		Duty.	Value.
1880			$ 33,796
1881			37,368
1882			70,065
1883			70,699
1884			71,755
1885			69,589
1886			57,953
1887			71,203
1888			101,257
1889			83,215
1890			77,434
1891			87,195
1892			59,537
1893			39,001
1894			24,625
1895			21,053
1896			19,296
1897			34,286
1898			29,611
1899			33,898
1900			39,149
1901			56,083
1902			55,530
1903			57,352
1904			55,595
1905	Drain tile, not glazed	20 %	$ 1,229
	Drain pipes, sewer pipes, chimney linings or vents, chimney tops and inverted blocks, glazed or unglazed	35 %	101,166
	Total		$102,395

TABLE 29.

STRUCTURAL MATERIALS.

ANNUAL PRODUCTION OF POTTERY.

Calendar Year.	Value.	Calendar Year.	Value.
1888	$ 27,750	1897	129,629
1889	Not available	1898	214,675
1890	195,242	1899	185,000
1891	258,844	1900	200,000
1892	265,811	1901	200,000
1893	213,186	1902	200,000
1894	162,144	1903	200,000
1895	151,588	1904	140,000
1896	163,427	1905	120,000

TABLE 30.

STRUCTURAL MATERIALS.

IMPORTS OF EARTHENWARE.

Fiscal Year.	Value.	Fiscal Year.	Value.
1880	$322,333	1893	$709,737
1881	439,029	1894	695,514
1882	646,734	1895	547,935
1883	657,886	1896	575,493
1884	544,586	1897	595,822
1885	511,853	1898	675,874
1886	599,269	1899	916,727
1887	750,691	1900	959,526
1888	697,082	1901	1,114,677
1889	697,949	1902	1,275,093
1890	695,206	1903	1,406,610
1891	634,907	1904	1,611,356
1892	748,810		

		Duty.	
1905	Earthenware and china :—		
	Baths, tubs and washstands, of earthenware, stone cement or clay, or of other material, N.O.P.	30 %	$ 73,569
	Brown or coloured earthen and stoneware, and Rockingham ware	30 %	15,464
	Decorated, printed or sponged, and all earthenware, N.E.S.	30 %	169,102
	Demijohns, churns and crocks	30 %	8,158
	White granite or ironstone ware, C.C. or cream coloured ware	30 %	37,706
	Tableware of China, porcelain or other clay	30 %	995,465
	China and porcelain ware	30 %	199,960
	Earthenware tiles	35 %	65,181
	Manufactures of earthenware, N.E.S.	30 %	71,609
	Total		1,636,214

TABLE 31.

STRUCTURAL MATERIALS.

EXPORTS OF SAND AND GRAVEL.

Calendar Year.	Tons.	Value.
		$
1893	329,116	121,795
1894	324,656	86,940
1895	277,162	118,359
1896	224,769	80,110
1897	152,963	76,729
1898	165,954	90,498
1899	242,450	101,640
1900	197,558	101,666
1901	197,302	117,465
1902	159,793	119,120
1903	355,792	124,006
1904	399,809	129,803
1905	306,935	152,805

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